

2014 Business Plan RECORD DETAIL

Record Date : 4/2/2014
Submission Date : 4/2/2014
Affiliation Type : Individual
Interest As : Individual
Submission Method : Website
First Name : Nancy
Last Name : Reidy

Business/Organization :

City :

County :

Zip Code : 94526

Stakeholder Comments/Issues : Dear Sir/Madam:

The new Business Plan does not give confidence in a good financial outcome. With reduced rider ship and higher cost for ticketing on top of LESS of the HIGH SPEED service, we taxpayers will be saddled with this cost forever. I urge you to bring your entire plan to a vote of the public. After all, this is a different project than the one voted on in 2008. I urge you to act responsibly on behalf of all of us.

Sincerely,
Nancy Reidy

**Draft Business Plan Comment
Type :**

2014 Business Plan RECORD DETAIL

Record Date : 4/2/2014
Submission Date : 4/2/2014
Affiliation Type : Individual
Interest As : Individual
Submission Method : Project Email
First Name : Michael J.
Last Name : Brady
Business/Organization :
City :
County :
Zip Code : 00000
Stakeholder Comments/Issues :

-----Original Message-----

From: William Warren [mailto:]

Sent: Tuesday, April 01, 2014 1:50 PM

To: Brady, Michael J.

Subject: Why It Is Inappropriate To Use Cap & Trade Funds To Finance HSR

Draft Business Plan Comment
Type :

Attachments : Inappropriate Use Of Cap and Trade.pdf (1 mb)

Why Cap & Trade Funds Cannot Be Used To Finance High-Speed Rail In California

Four Crucial Briefing Papers

April 2 2014

This paper regarding California's proposed high-speed rail project can be found at:
<https://sites.google.com/site/hsrcaliffr/home/3-1-briefing-paper---2014-plan/2-04-2014-analysis-of-cap-and-trade>

Additional reports on California's proposed high-speed rail project can be found at:
<https://www.sites.google.com/site/hsrcaliffr/>

Introduction & Overview To The Four Papers

Introduction: The Governor's FY 2014-15 budget requests \$250 million of Cap & Trade auction proceeds, and a third of all those proceeds thereafter to help finance the construction of California's high-speed rail (HSR) project.

As of early 2014, federal grants are close to being extinguished unless the State finds funds to match spent federal dollars. But with funds from the sale of Proposition 1A (Prop1A) funds denied the California High-Speed Rail Authority (CHSRA) because of court rulings, (now in the appeals process) it seems to many that funds from California's Cap & Trade auctions may be the sole funding source to continue the project.

The history of AB32, the legislative context of Cap & Trade funds, is rocky. After several court challenges, AB32 became law in 2006. Then-Speaker of the California Assembly, Fabian Nunez, authored AB32. During deliberations he stated the bill's intent.

*"AB32 authorizes the California ARB [Air Resources Board] to adopt a schedule of fees to pay for the direct costs of administering the reporting and emission reduction and compliance programs established pursuant to the bill's provisions. IT IS MY INTENT THAT ANY FUNDS PROVIDED BY HEALTH AND SAFETY CODE SECTION 38597 **ARE TO BE USED SOLELY FOR THE DIRECT COSTS INCURRED IN ADMINISTERING THIS DIVISION.**" [Emphasis added]*

The use of Cap & Trade funds to finance the construction of the HSR project has been highly controversial, not just with the 'environmental community' but also with the LAO in 2012 and 2014, as well as with scholars who question the environmentally-friendliness of high-speed rail. Using Cap & Trade funds to construct the high-speed rail project may also be illegal. It was seen to be controversial in 2012 when the Legislature resisted Governor Brown's first attempt to divert Cap & Trade to the HSR project, and it is controversial now.

Overview: Because the issue is far from settled, four authors submitted papers about using Cap & Trade funds to build the high-speed rail project. They are:

Paper 1 – The Reason Foundation's paper by Wendell Cox and Adrian Moore, California High Speed Rail Project Greenhouse Gas (GHG) Emissions: A Dynamic Impact and Cost Analysis, analyzes the State's mandate, and the science of and the unverified data on which High-Speed Rail Authority claims its proposed system's environmental benefits. They point out that AB32 includes a cap and trade program and requires greenhouse gas emissions (GHG) be reduced 80%, to be at 1990 levels, by 2050. In February 2014, the California Air Resources Board (CARB) reported

that to achieve the 2050 target requires acceleration of annual GHG emission reductions at more than double the rate necessary to achieve the interim 2020 targets. High-speed rail (HSR) construction will create substantial GHG. HSR, which is forecasted to begin operations in 2022, cannot reduce GHG emissions before AB32's 2020 horizon and the project's construction must purchase credits through the cap and trade program. Very high passenger load factors may reduce overall GHG emissions. Cost effective GHG reduction is paramount to maintaining economic growth and not passing on AB32's costs to the disadvantaged. Based on four scenarios for 2040 from the 2014 Draft Plan, using high-speed rail (HSR) to reduce GHG emissions would be far more expensive per ton than alternatives, and range from 90 to 1,400 times the cost of cheaper carbon offsets.

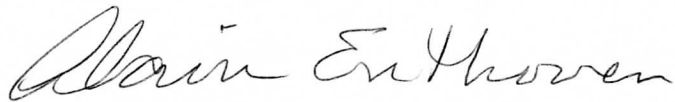
Paper 2 – Attorneys Birkey and Purvis' memorandum, the **Legality of Use of Cap-and-Trade Auction Proceeds to Fund High-Speed Rail**, outlines the goal of reducing GHG emissions statewide to 1990 levels, details the statutory requirements that Cap & Trade auction proceeds must be used to advance the goals of AB32, and that Health and Safety Code section 39712 plainly requires that AB32's auction proceeds must be used *"to facilitate the achievement of reductions of greenhouse gas emissions in [California] consistent with"* AB32. These esteemed attorneys then show why funding high-speed rail will not further the purposes of AB32. They finish with an analysis of why the use of Cap & Trade funds is a poor investment as a means to fund the high-speed rail project.

Paper 3 – Transportation Solutions Defense and Education Fund's President, David Schonbrunn, prepared an **Analysis of the CHSRA's GHG Report**, the California High-Speed Rail Authority's attempt to justify using the Cap & Trade funds. Schonbrunn argues that the entire approach is fallacious because it does not address here-and-now questions with facts, nor environmental impacts after construction of the first 29 miles. Rather the CHSRA report says, *"As the project moves forward, direct GHG emissions calculations will be carried out for each subsequent construction package."* He also points out there is no substantive or quantitative data on GHG emissions or their reductions, and no evidence to support CHSRA's contentions that by using renewable energy sources during construction, planting trees and supporting public transport the project will reduce GHG. These assertions are a *deus ex machina*, without foundation and inserted during the last minutes in the argument about using Cap & Trade funds.

Paper 4 – Mr. Mark Powell's paper, **The History and Status of The California High-Speed Rail Authority's Unlawful Funding Plan**, presents the context of funding the project using Cap & Trade monies. It details the evolution of high-speed rail funding approaches from the 1990s onwards. It shows how the CHSRA, ignoring directives to find ways of using sales or fuel taxes to fund the project's construction instead gambled that massive federal grants, coupled with Prop1A matching fund obligations,

would deflect criticism of the costs. That gamble failed. Federal funds have been limited to a single FY2010 grant and the nation's largest ARRA grants. The Department of Transportation (DOT) has not put new money into the California project for four fiscal years. The private sector has never put money in the project. Neither source is likely to in the future. Powell's paper closes by showing that the Governor's proposal would provide an infinitesimally small proportion of what is needed to continue constructing. Relying on Cap & Trade to fill the gap is foolish.

These papers represent a wide spectrum of practical and legal reasons that must be considered by decision makers during the debate over the use of Cap & Trade funds to partially finance California's proposed high-speed rail project. We thank the contributors for volunteering their time to prepare the papers and urge all readers to consider their arguments.

A handwritten signature in cursive script, reading "Alain Enthoven". The signature is fluid and elegant, with the first name "Alain" being more prominent than the last name "Enthoven".

Alain C. Enthoven
Marriner S. Eccles Professor of Public and Private Management (Emeritus),
Graduate School of Business,
Stanford University

Paper 1

California High Speed Rail Project Greenhouse Gas (GHG) Emissions: A Dynamic Impact and Cost Analysis

Wendell Cox and Adrian Moore

The Reason Foundation

California High Speed Rail Project
Greenhouse Gas (GHG) Emissions: A Dynamic Impact and Cost Analysis

By Wendell Cox
Project Director: Dr. Adrian Moore

EXECUTIVE SUMMARY

California has established one of the most aggressive greenhouse gas (GHG) emissions reduction policies in the world. Under Assembly Bill 32 (AB32) and Governor Schwarzenegger's Executive Order number S-3-05, the state has adopted a cap and trade program to reduce GHG emissions and a requirement to reduce GHG emissions 80 percent between 1990 and 2050. The state proposes to build a high-speed rail line one objective of which is to reduce GHG emissions. This report evaluates the extent to which any GHG reduction from this proposed new rail line would arise and to put these into context, comparing the cost of such emission reductions with alternatives.

General Conclusion: It is generally concluded that high speed rail is an ineffective and expensive strategy for reducing GHG emissions. Under each of the scenarios examined in this report, high-speed rail would be many times more expensive per tonne of GHG emissions reduction than other alternatives, ranging from 75 times to 1,400 times the cost of carbon offsets. High-speed rail not only fails to advance the purposes of AB32, but it also retards the purposes of state law and policy by inefficiently consuming funding that could be used to obtain far greater GHG emission reductions.

1. Background

The California high speed rail line would operate from San Francisco to Los Angeles over both genuine high-speed rail and commuter rail right-of-way. The low option cost estimate is approximately \$68 billion (in year of expenditure dollars), although the state is far short of the funding needed to complete the line. The Brown administration has proposed using cap and trade funds to support construction of the line.

2. California Greenhouse Gas Emission Policy

California's GHG emissions reduction policies are based on objectives set in Assembly Bill 32 (AB32) and an executive order by Governor Schwarzenegger. AB32 sets an objective to reduce California's GHG emissions to 1990 levels by 2020. Ultimately, the policies require that GHG emissions in the state be reduced 80 percent from 1990 levels by 2050. A number of strategies have already been adopted, such as a cap and trade program and the "zero emission vehicle" (ZEV) program.

It will be challenging to meet the 2050 goal. The California Air Resources Board (CARB) indicates that a substantial acceleration of annual GHG reductions will be required between 2020 and 2050.

3. The CHSRA High Speed Rail GHG Emissions Reduction Forecast

Under certain circumstances, high-speed rail reduces GHG emissions by shifting people from other modes of transport, including cars and airliners. These modes of travel rely on fossil fuels, which produce substantially more in GHG emissions per unit of consumption (a mile traveled by a rail passenger, airline

passenger or vehicle driver) than the electricity generated to power high-speed rail trains, when those trains are at sufficient capacity. The construction of high-speed rail lines produces GHG emissions, which are usually offset over a period of time by the reductions from the transfer of highway and airliner passenger demand.

The California High Speed Rail Authority (CHSRA) has estimated that high-speed rail will reduce statewide GHG emissions by between 1.15 and 1.85 million metric tonnes annually by 2035. However, these estimates are likely high, due at least in part to the treatment of GHG emissions from electricity generation to power the trains and out-of-date assumptions with respect to light vehicle (automobile and light truck) fuel economy.

In addition, high-speed rail passenger projections have routinely been overly optimistic and the projections of CHSRA have been similarly criticized as being too high. Any over projection of ridership would also cause the GHG emissions reduction forecast to be high because there would be a smaller reduction in light vehicle and airliner use.

The Need for Dynamic Forecasting: Finally, and most importantly, California's policy environment could render any conventional GHG emission reduction forecast to be grossly over-optimistic. Conventional forecasting, such as performed by CHSRA, takes account of only already adopted measures and is thus "static." Yet the measures that have been formally adopted will be, according to CARB, insufficient to achieve the 2050 GHG emissions reduction objective. Indeed, assuming that California achieves its objectives, the high speed rail advantage over light vehicles in GHG emissions reductions will be virtually eliminated by 2040 (the horizon year used in this analysis). Static forecasts (such as the present CHSRA forecast) are virtually irrelevant, because CARB is obligated to adopt sufficient measures to meet the GHG emissions reduction objectives. There is a need for "dynamic" forecasting that includes the required GHG emissions reductions.

4. Alternative GHG Emissions Reduction Forecasts

This report develops alternative GHG emissions reduction forecasts, under two categories ("Dynamic Forecasts" and "Static Forecasts") for the horizon year of 2040.

Dynamic Forecasts: The Dynamic Forecasts assume that California will achieve its 2050 GHG emissions reduction objective and will be on a trajectory toward that achievement in 2040. The scenarios assume the adoption of specific strategies, already some already suggested by CARB that would achieve the target.

Static Forecasts: The Static Forecasts assume specific strategies that have already been adopted. Because these strategies are insufficient to produce the GHG emissions reductions required by California law and policy, each of the Static Forecasts would produce GHG emissions reductions that are likely to be far greater than will actually occur because light vehicle emissions are likely to be radically reduced by anticipated CARB policies (which is indicated in the Dynamic Forecasts).

Three scenarios are presented for each category, as indicated in Table ES-1.

Table ES-1 California High Speed Rail GHG Emission Reduction Scenarios	
DYNAMIC FORECASTS	
Assumptions	Adoption of additional specific strategies necessary to achieve California's 2050 GHG emission reduction objective.
Implication	That the state will achieve its 2050 GHG emissions objective and will be on a trajectory to achievement in 2040
SCENARIOS	A-1: CHSRA (Scenario [B-1] adjusted for California 2050 policies): Insufficient Information
	A-2: Adjusted CHSRA (Scenario [B-1] adjusted for California 2050 policies)
	A-3: International Experience (Scenario [B-1] adjusted for California 2050 policies)
STATIC FORECASTS	
Assumptions	Impacts of legally binding strategies that have been adopted by government agencies.
Implication	That the state will fall far short of achieving its 2050 GHG emissions reduction objective.
SCENARIOS	B-1: CHSRA (CHSRA midpoint ridership forecast with CHSRA GHG emissions reduction forecast)
	B-2: Adjusted CHSRA (CHSRA midpoint ridership forecast with independent GHG emissions reduction forecast)
	B-3: : International Experience (International ridership forecast & independent GHG emissions reduction forecast)

A model was developed to forecast the GHG emissions using the 2040 ridership projections in the *2014 Business Plan* and data from government sources.

GHG emission reductions from high speed rail range are forecast at from 0.12 million to 0.25 million tonnes annually in 2040 under the Dynamic Forecasts. This compares to the CHSRA static forecast reduction of 1.54 million tonnes. Under the other static forecasts, reductions of from 0.29 million to 0.59 million tonnes would occur (Table ES-2).

Table ES-2 Greenhouse Gas Emission Reductions from High Speed Rail: 2040			
Scenarios	CHSRA	Adjusted CHSRA	International Experience
Dynamic Forecasts	Insufficient Information	-0.25	-0.12
Static Forecasts	-1.54	-0.59	-0.29
In millions of metric tonnes			
Phase 1 Blended System			
Construction GHGs not considered due to lack of data.			
Sources: CHSRA and author's calculations			

5. Cost Effectiveness of High Speed Rail GHG Emissions Reductions

To minimize disruption of the economy and economic growth, major public policy program (such as California's GHG emissions reduction program) should be cost-effective, so that the standard of living is not retarded and poverty is not increased. The importance of cost effectiveness in reducing GHG emissions has been stressed by many, including CARB.

The principal metric is the cost per ton of GHG emissions reduction. Currently, the market price of carbon credits, which corresponds to a ton of GHG emission reduction, is approximately \$13 per ton (such as for tree planting programs or airline GHG offsets). Some strategies are far more cost effective than carbon offsets. Vehicle fuel economy improvement programs by the Environmental Protection Agency and CARB have indicated *negative costs of up to \$300 per tonne*.

The forecast cost per ton of GHG emissions reduction by high-speed rail range from \$7,100 to \$18,600 under the Dynamic Forecasts and \$1,000 to \$8,000 under the Static Forecasts (Table ES-3).

Table ES-3			
Cost per Metric Tonne of Greenhouse Gas Emission Reductions from High Speed Rail: 2040 (2013\$)			
Low Capital Cost Option	CHSRA	Adjusted CHSRA	International Experience
Dynamic Forecasts	Insufficient Information	\$ 7,100	\$ 15,700
Static Forecasts	\$ 1,000	\$ 3,000	\$ 6,800
2013\$			
High Capital Cost Option	CHSRA	Adjusted CHSRA	International Experience
Dynamic Forecasts	Insufficient Information	\$ 8,500	\$ 18,600
Static Forecasts	\$ 1,300	\$ 3,700	\$ 8,000
2013\$			
Construction GHGs not considered due to lack of data.			
Sources: CHSRA and author's calculations			

6. Prioritizing GHG Emissions Reduction Strategies

The Legislative Analyst's Office has stressed the importance of prioritizing high-speed rail relative to other alternatives for GHG emissions reductions as a prerequisite to the use of cap and trade funding.

Under each of the scenarios, high-speed rail would be many times more expensive per tonne of GHG emissions reduction than other alternatives, ranging from 75 times to 1,400 times the cost of carbon offsets. For example, \$250 million carbon offsets to abate GHG emissions are nearly equal to the required AB32 statewide reduction from all sources in 2020 compared to 2011. To state the issue in terms similar to CHSRA in its GHG emissions reduction report, \$250 million could purchase carbon credits equal to taking all of the light vehicles in the San Francisco and San Jose metropolitan areas off the road for a year (with GHG reductions that would be achieved before the 2020 AB32 deadline). High-speed rail not only fails to advance the purposes of AB32, but it also retards its purposes by inefficiently consuming funding that could be used to obtain far greater GHG emission reductions.

The longer run cost intensity is illustrated by applying the minimum high speed rail 2040 costs per tonne (CHSRA Scenario [B-1]) to the required state policy that 2050 GHG emissions be 80 percent of 1990 emission levels. If the average cost per tonne of GHG emission reduction in 2050 were equal to the projected cost per tonne of reductions via high speed rail, the total cost would be, approximately \$350 billion (in 2013\$), an amount equal to 1/7 the present size of California's gross domestic product (GDP). Under the more likely "Dynamic Forecast: International Ridership Scenario" (A-3) the cost could be up to \$6.2 trillion (in 2013\$). This is up to three times the size of California's GDP, larger than the GDP of Japan and larger than the GDPs of all countries in the world except for the United States and China in 2013.

Moreover, any GHG emissions reduction advantage of high speed rail would be fleeting. By 2040, much of the high speed rail advantage in GHG emissions relative to cars would have been eliminated by vehicle fuel economy improvements, under CARB plans. In the decade that follows, the gap would be further narrowed. By the 2060 long term horizon considered in the *2014 Business Plan*, any contribution by high speed rail toward lower GHG emissions may have been lost.

Further, diversion of cap and trade revenues for insufficiently cost effective GHG emissions reduction purposes could have political consequences. Support for the statewide GHG emissions reduction program could be diluted as it becomes clear that it is subject to political whim. Further, the failure to resolutely direct cap and trade revenues only to the most cost effective uses could further retard the state's business climate by indicating a lack of sufficient financial responsibility.

7. The Imperative for Cost-Effectiveness and Realism

High-speed rail would contribute only minimally to the reduction of GHG emissions, and its impact would be only temporary. These emissions reductions would require an exorbitant expenditure compared to other alternatives and would seem to betray a lack of seriousness with respect to GHG emissions reduction.

These expenditures would foreclose far more cost-effective approaches , unnecessarily restricting government options to maintain and improve public services. They would also reduce funding available for expanded business investment that could lead to greater economic growth, higher standard of living, and lower levels of poverty. In short, high-speed rail, both in terms of the present proposal to use cap and trade revenues and the longer term, retards the ability of the state to achieve its GHG emissions reduction objectives.

8. Legality of Cap and Trade Funding for High Speed Rail

Questions have also been raised about the legality of using cap and trade funding for high-speed rail, which has been proposed. These include a concern that high-speed rail does not serve the objectives of AB32, because it would not reduce GHG emissions before the 2020 AB32 deadline. Further, the Legislative Counsel has indicated concern that cap and trade revenues, as mitigation fees, may not be legally spent on high speed rail.

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1. BACKGROUND

California has established one of the most aggressive greenhouse gas (GHG) emissions reduction policies in the world.. Under Assembly Bill 32 (AB32) and Governor Schwarzenegger's Executive Order #S-3-05, the state has adopted a cap and trade program to reduce GHG emissions and a requirement to reduce GHG emissions 80 percent between 1990 and 2050. At the same time, the state proposes to build a high-speed rail line that would purportedly materially contribute GHG emissions reduction.

1.1 The California High Speed Rail Proposal

The California high speed rail Phase 1 Blended system is planned to operate over a genuinely high speed rail right of way for most of its route, while sharing track with commuter railways on the approaches to the northern and southern terminals (Los Angeles Union Station and San Francisco's Transbay Terminal).

Phase 1 Blended system operations would begin in 2029, offering "one-seat" service over the commuter rail and high speed rail right of way between San Francisco and Los Angeles. Travelers to and from Orange County (Anaheim) would have use Metrolink commuter trains to and from Union Station, where they would transfer between the two services.

Greenhouse Gas Emissions

One of the principal selling points of the California High Speed Rail project is its expected contribution to reducing greenhouse gas (GHG) emissions. The California High Speed Rail Authority CHSRA provided estimates of expected GHG emissions reductions in June 2013.¹ In its first year of operations, high-speed rail would reduce GHG emissions by the same amount as removing 31,000 cars from the road, which CHSRA indicated stretch for 100 miles on a single highway lane. By 2035, CHSRA indicated that an annual reduction of between 1.15 and 1.85 million metric tonnes² of GHG emissions would be achieved by operating high-speed rail.

Some travel by highway and airliners would be transferred to the high-speed rail system. Since the high-speed rail trains generally produce lower levels of GHG emissions per mile traveled than automobiles and airliners, it is expected that GHG emissions will be reduced. However, construction of the high-speed rail line will increase GHG emissions.

1.2 Costs and Funding

The *2012 Draft Revised Business Plan* projected the cost of the project at between \$68.4 billion and \$79.7 billion in "year of expenditure" dollars.³ The low cost option has been revised to \$67.6 billion in the *2014 Business Plan*.⁴ Over the past two years, most of the attention with respect to costs has been on the low-

¹ California High Speed Rail Authority (June 2013), *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels*.

http://www.hsr.ca.gov/docs/programs/green_practices/HSR_Reducing_CA_GHG_Emissions_2013.pdf.

² At 2,205 pounds, a metric tonne is 1.10 times the weight of a short ton (2,000 pounds), which is more commonly used in the United States. The spelling "tonne" is commonly applied to metric tonnes and is used throughout this report.

³ California High Speed Rail Authority (April 2012), *California High-Speed Rail Program Draft Revised 2012 Business Plan*, http://www.hsr.ca.gov/docs/about/business_plans/FINAL_Draft_2014_Business_Plan.pdf.

⁴ California High Speed Rail Authority (February 2014), *2014 Business Plan*, http://www.hsr.ca.gov/docs/about/business_plans/FINAL_Draft_2014_Business_Plan.pdf

cost option, yet the project itself has experienced substantial cost escalation already.⁵ Further, megaprojects tend to experience substantial cost escalation.⁶ Failure to consider the higher figure could be risky to the state and its taxpayers.

The low-cost option would cost \$54.9 billion in inflation adjusted dollars (2013\$). It is assumed that the high-cost option cost would remain proportional to its 17 percent higher relationship from the *2012 Business Plan*, at \$64.1 billion. For clarity, this report uses constant dollar costs, expressed in 2013 dollars. The high-speed rail system faces severe funding challenges and is far short of the financial commitments required to complete the Phase 1 Blended System.

The Brown Administration has proposed using \$250 million in Assembly Bill (AB32)⁷ cap and trade revenues from the 2014 – 2015 budget to support construction of the proposed California high speed rail project. In addition, the Administration has indicated that cap and trade funds should become an even larger share of high-speed rail funding in the future.⁸

There are considerable difficulties with this proposal. Perhaps the most important is whether AB32 cap and trade funds can be legally used for high-speed rail. It is generally agreed that high-speed rail cannot reduce GHG emissions before the 2020 horizon in AB32. Yet, the Brown Administration believes that GHG reduction from high-speed rail is so important as to justify the expenditure of cap and trade revenues. The legal issues are covered extensively by the Legislative Analyst's Office and a short summary is provided in Appendix A.

The focus of this report is a public policy evaluation of the effectiveness of high speed rail as a means for GHG emission reductions. The high priority the GHG emission reductions have received in both California legislation and policy requires that mitigation strategies be cost effective. Thus far, there has been no state or California High Speed Rail Authority GHG cost-effectiveness analysis. As the Legislative Analyst's Office has indicated, GHG emissions reduction strategies should be subjected to a consistent cost metric. This report provides an "out – of – pocket" estimate of the cost per ton of GHG emission reduction by high-speed rail. The calculations generally follow the McKinsey Corporation greenhouse gas emissions cost curve methodology.⁹ The principal time horizon is 2040, the end of the first decade with full service and the year for which detailed ridership data was provided by CHSRA in its *2014 Business Plan*.

This report principally relies on state documents, especially from CHSRA and the California Air Resources Board. Reports from outside the CHSRA (such as from CARB and the EPA) are taken at face value, with no attempt to evaluate their findings.

⁵ Joseph Vranich & Wendell Cox, "California High Speed Rail: An Updated Due Diligence Report," Reason Foundation (2013), http://reason.org/files/california_high_speed_rail_report.pdf

⁶ Bent Flyvbjerg, Nils Bruzelius and Werner Rothengatter, *Megaprojects and Risk: An Anatomy of Ambition*, (Cambridge, UK: Cambridge University Press, 2003)

⁷ The Global Warming Solutions Act.

⁸ Chris Megerian and Ralph Vartabedian (February 24, 2014), "Gov. Jerry Brown wants polluters' fees to help fund high-speed rail," <http://www.latimes.com/local/la-me-brown-rail-20140228,0,4977021.story#ixzz2ubyMC1e8>.

⁹ Calculated as the annual operating and capital cost, minus expected cost savings (especially from reduced energy consumption) divided by the metric tonnes of greenhouse gas emissions avoided. See: Per-Anders Enkvist, Tomas Nauclear and Jerker Rosander (2007, Number 1), "A cost curve for greenhouse gas reduction," *McKinsey Quarterly*, http://www.epa.gov/oar/caaac/coaltech/2007_05_mckinsey.pdfhttp://www.epa.gov/oar/caaac/coaltech/2007_05_mckinsey.pdf

2. CALIFORNIA GREENHOUSE GAS EMISSION REDUCTION POLICY

California has established aggressive goals for GHG emissions reductions, which require an 80% reduction in GHG emissions by 2050. Achievement of an 80% reduction in GHG emissions by 2050 will be challenging.

Trajectory to 2050: A recent CARB commissioned¹⁰ report reviewed three scenarios for 2050 and found that none achieved the 80 percent statewide GHG emissions reduction target. The scenarios included current policies, uncommitted GHG emissions reduction targets, and technological advances.

In its recently published *Proposed First Update to the Climate Change Scoping Plan: Building on the Framework (February 2014 Scoping Plan)*, the California Air Resources Board (CARB) noted that to achieve the 2050 80 percent reduction target would require acceleration of annual GHG emission reductions at more than double the rate that has been necessary to achieve the 2020 targets.¹¹ CARB has laid out a number of policy options for strengthening GHG emissions reductions to achieve both an interim target for 2030 and the 80 percent reduction target for 2050. Figure 1 in CARB's *Vision for Cleaner Air*¹² indicates the extent of GHG emissions reduction and trend by 2050 that it seeks to meet the California objectives. The dark section of the chart represents Gasoline, Diesel and Natural Gas. The lighter section of the chart represents Hydrogen, Electricity, and Jet Fuel.

¹⁰ Jeffery B. Greenblatt (20120, "Estimating Policy-Driven Greenhouse Gas Emissions Trajectories in California: The California Greenhouse Gas Inventory Spreadsheet (GHGIS) Model, Ernesto Orlando Lawrence Berkeley National Laboratory <http://eetd.lbl.gov/sites/all/files/lbnl-6451e.pdf>.

¹¹ California Air Resources Board (2014), *Proposed First Update to the Climate Change Scoping Plan: Building on the Framework (February 2014 Scoping Plan)*, http://www.arb.ca.gov/cc/scopingplan/2013_update/draft_proposed_first_update.pdf

¹² California Air Resources Board, *Vision for Cleaner Air*, <http://www.arb.ca.gov/planning/vision/vision.htm> and http://www.arb.ca.gov/planning/vision/docs/draft_scenario_assumptions_and_results_appendix.pdf and http://www.arb.ca.gov/planning/vision/docs/vision_for_clean_air_public_review_draft.pdf

CARB Scenario 2 Vision 2010 TO 2040

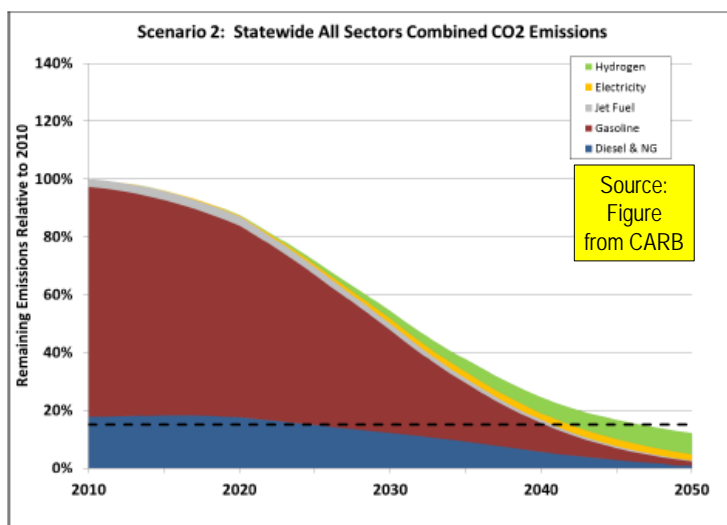


Figure 1

It will be challenging to meet these objectives. Any attempt to meet such targets should be prioritized by cost-effectiveness, which would coincidentally ensure that any negative impact on economic growth would be minimized. This would, consequently, limit any reduction in the standard of living and increase in the poverty rate.¹³

Regulations: Present and Future: Certain CARB and federal regulations are appropriate to an analysis of GHG emissions relating to high-speed rail. The principal source of reductions from high-speed rail would be the difference in GHG emissions per unit of passenger consumption ("passenger mile") between the train and alternative forms of travel, principally automobiles and airliners. Today, automobiles and airliners produce more GHG emissions per passenger mile than high-speed rail is expected to produce.

Regulations have been adopted to materially improve fuel economy for new light vehicles. By 2025, EPA regulations require the average new car to achieve 54.5 miles per gallon. Fuel economy improvements have a one to one relationship between motor fuel consumed and GHG emissions reductions --- each gallon of gasoline combusted produces the same volume of GHG emissions.

In addition, CARB has adopted a Low Carbon Fuel Standard (LCFS), which essentially requires a 10 percent reduction in GHG emissions from fuels (in addition to the improvement in fuel economy).

Perhaps the most significant CARB regulation authorizes the "zero emission vehicle" (ZEV). Beginning in 2017, two percent of light vehicles sold must be ZEVs. This rises to 16 percent in 2025. Substantial strengthening of the regulation is anticipated according to CARB:¹⁴

¹³ California has the highest poverty rate in the United States, adjusted for housing costs, according to the US Bureau of the Census.

¹⁴ California Air Resources Board (2014), *Proposed First Update to the Climate Change Scoping Plan: Building on the Framework (February 2014 Scoping Plan)*, http://www.arb.ca.gov/cc/scopingplan/2013_update/draft_proposed_first_update.pdf

Achieving our long-term climate goal and 2032 ozone standards will require a much deeper penetration of ZEVs into the fleet. As outlined in the 2009 ZEV Review and the 2012 Vision for Clean Air, and several independent studies (See Chapter III), the light-duty vehicle segment will need to become largely electrified by 2050 in order to meet California's emission reduction goals.

CARB documentation indicates that 87 percent of the light vehicle fleet in the state will be ZEV vehicles by 2050.¹⁵ Virtually 100 percent of vehicles in the state would be ZEVs at some point during the following decade (Figure 2). CARB also recommends increasing the LCFS to between 15 and 20 percent in the future.¹⁶

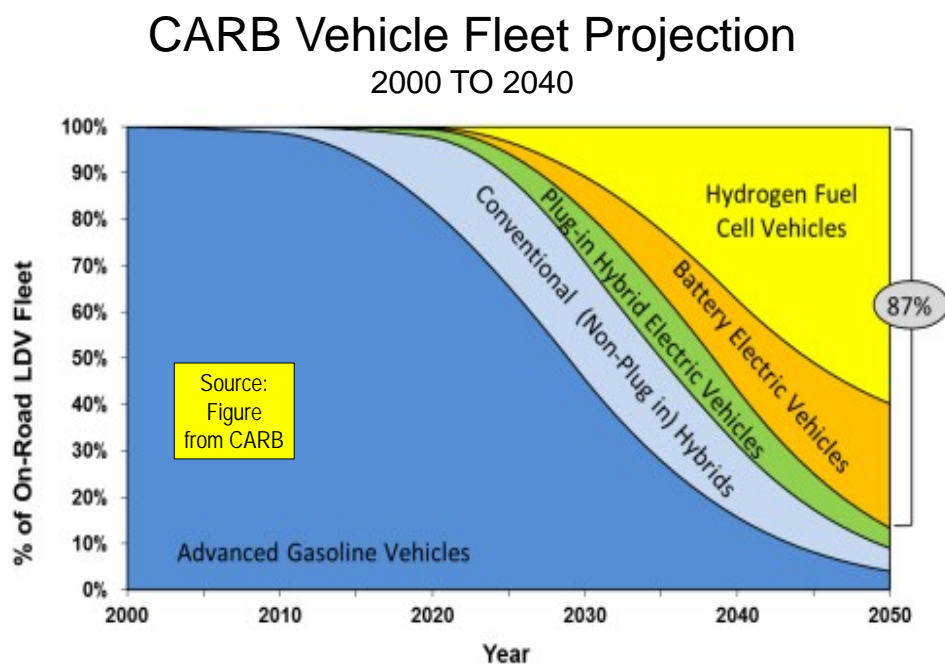


Figure 2

3. THE CHSRA HIGH SPEED RAIL GHG EMISSIONS REDUCTION FORECAST

Generally, the international transportation literature indicates that high-speed rail results in a reduction of GHG emissions compared to driving and from airline operations, if there is a sufficient diversion of demand. This is because GHG emissions from cars and airline operations are higher per passenger mile (miles traveled by a passenger) than from high speed rail, which can spread a train's emissions over a lot of passengers. High speed rail GHG emissions are produced by the generation of electricity to power the trains, supportive functions (station operations and construction).

¹⁵ California Air Resources Board, Public Hearing to Consider Advanced Clean Cars Program, <http://www.arb.ca.gov/board/books/2012/012612/12-1-2pres.pdf>.

¹⁶ California Air Resources Board (2014), *Proposed First Update to the Climate Change Scoping Plan: Building on the Framework (February 2014 Scoping Plan)*, http://www.arb.ca.gov/cc/scopingplan/2013_update/draft_proposed_first_update.pdf

In addition to the GHG that occur from attracting riders from cars and planes, high-speed rail itself produces GHG emissions during construction. It is generally assumed that the GHG emissions produced during construction will be recovered by greater GHG emissions reductions that occur from operating the high-speed rail system.

3.1 GHG Emissions from Construction

Construction activity GHG emissions estimates have varied significantly. One independent report indicated that it could take up to 70 years to offset the construction related GHG emissions with the anticipated GHG emissions reductions from operating trains.¹⁷ The California high-Speed Rail Authority has estimated that construction GHG emissions would be offset by GHG reductions from operations 2.8 years over the Fresno to Bakersfield segment.¹⁸

The Legislative Analyst's Office expects that a longer period will be required to recover the construction activity GHG emissions increases.¹⁹

...an independent study found that—if the high-speed rail system met its ridership targets and renewable electricity commitments—construction and operation of the system would emit more GHG emissions than it would reduce for approximately the first 30 years.

CHSRA intends to offset the GHG emissions additions by purchasing carbon credits through a tree planting program. Because of insufficient CHSRA documentation, construction GHG emissions are not evaluated further in this report.

3.2 GHG Emissions from Operations

CHSRA has indicated high speed rail operations will reduce GHG emissions from 1.15 to 1.85 million tonnes per year by 2035,²⁰ after the Phase 1 Blended System has been in operation for six years. By 2050, the reduction would be between 1.24 and 1.99 million tonnes per year. This report uses the year 2040 for its analysis of GHG emissions impacts. The year 2040 is used for analysis because corresponding ridership data was provided in the *2014 Business Plan*.²¹ Based on the 2035 and 2050 CHSRA forecasts, the corresponding GHG emissions reduction range for 2040 would be approximately 1.18 million to 1.90 million tonnes per year.

3.3 Analysis of the CHSRA GHG Emissions Reduction Projections

CHSRA provides only a summary description of the method used in its projection of GHG emissions reductions from operations. This makes a detailed analysis of the CHSRA GHG emissions reduction

¹⁷ Mikhail Chester and Arpad Horvath (2010), *Life-Cycle Environmental Assessment of California High Speed Rail*, Access.

¹⁸ California High Speed Rail Authority, *Draft Environmental Impact Report/Statement: Fresno to Bakersfield*, Table 3.3-17, http://www.hsr.ca.gov/docs/programs/fresno-baker-eir/drft_EIR_FresBaker_Vol1_3_3.pdf

¹⁹ Legislative Analyst's Office, *The 2012-13 Budget: Funding Requests for High-Speed Rail*, <http://www.lao.ca.gov/analysis/2012/transportation/high-speed-rail-041712.aspx>

²⁰ Previously, CHSRA had projected that the Phase 1 Blended System would reduce GHG emissions 4.8 million tonnes (Table 3.3-13, CHSRA, *Draft Environmental Impact Report/Statement: Fresno to Bakersfield*, http://www.hsr.ca.gov/docs/programs/fresno-baker-eir/drft_EIR_FresBaker_Vol1_3_3.pdf).

²¹ The ridership projections in the *2014 Business Plan* is provided between major regions (such as the San Francisco Bay Area, Southern California, and the San Joaquin Valley), although not specifically between stations.

projection impossible. Even with the limited information, there are indications of concerns that could have resulted in the GHG emissions reduction projections being high.

GHG Emissions from Electricity Production: The GHG emissions reduction forecasts may be overly optimistic from treatment of GHG emissions production from electricity generation. CHSRA indicated plans to purchase only electricity that is produced with renewable resources. Renewable resources generally produce lower levels of GHG emissions than fossil fuels.²²

*... the assumption for power emissions is that the Authority has purchased a renewable power mix of 20 percent solar, 40 percent wind, 35 percent geothermal, and 5 percent biogas converted to electricity.*²³

Yet the use of renewable resources would not reduce the GHG emissions of high speed rail to any greater extent than it does any other business or household in the pool of California electricity consumers. Renewable energy is scarce. To the extent that CHSRA uses renewable electricity, it is likely to preclude such use by others. This suggests that when CHSRA buys renewable electricity the total available electricity supply remains the same, but the renewable portion is allocated differently between users. Any credit taken by CHSRA for renewable power use that exceeds the generation mix in the state, could effectively crowd out consumption by other consumers. GHG emissions from electricity used in the state are reduced only when total emissions are reduced, not when they are reallocated between consumers.

Light Vehicle Emissions: The CHSRA GHG emissions reduction forecast may also be overly optimistic. CHSRA used the CARB EMFAC2011 model to project GHG emissions reductions from light vehicles. The EMFAC2011 model does not include the effect of the new more stringent 2016 to 2025 fuel economy standards adopted by the Obama Administration, which are reflected in the latest US Department of Energy projections.²⁴ This would result in an overstatement of GHG emissions reductions.

However, without a more detailed description of their methodology and data used, CHSRA's GHG emissions reduction forecast cannot be analyzed in detail.

California GHG Emissions Reduction Policy: Further, the CHSRA GHG emissions reduction projections were based on conventional assumptions that include only adopted public policy measures. Under normal circumstances, this would be sufficient. However, the public policy situation in California is unprecedented, with substantial additional policy adoptions virtually assured. As a result, a conventional "static" forecasting approach is likely to produce far higher reductions in GHG emissions than are likely in California's policy environment. A more dynamic forecasting method is thus required, as is described below.

California is strongly committed to reaching an 80 percent reduction in GHG emissions by 2050. It is clear that the California Air Resources Board intends to implement such measures as are necessary to achieve this objective.

The potential progress is indicated in Figure 3, showing projected trends in high speed rail and light vehicle emissions to 2040. Virtually all of high speed rail's advantage relative to ZEV vehicles could be

²² National Renewable Energy Laboratory (January 2013), *Life Cycle Greenhouse Gas Emissions from Electricity Generation*, <http://www.nrel.gov/docs/fy13osti/57187.pdf>.

²³ California High Speed Rail Authority (June 2013), *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels*.

²⁴ US Department of Transportation, Energy Information Administration, *Annual Energy Outlook 2014*.

eliminated at the likely unachievable 85 percent load factor²⁵ forecast by CHSRA. At the lower ridership level indicated in international research, light vehicles could *eliminate* the GHG emissions advantage of high-speed rail per highway mile.²⁶

GHG Emissions: HSR & Light Duty Vehicles

2010 TO 2040

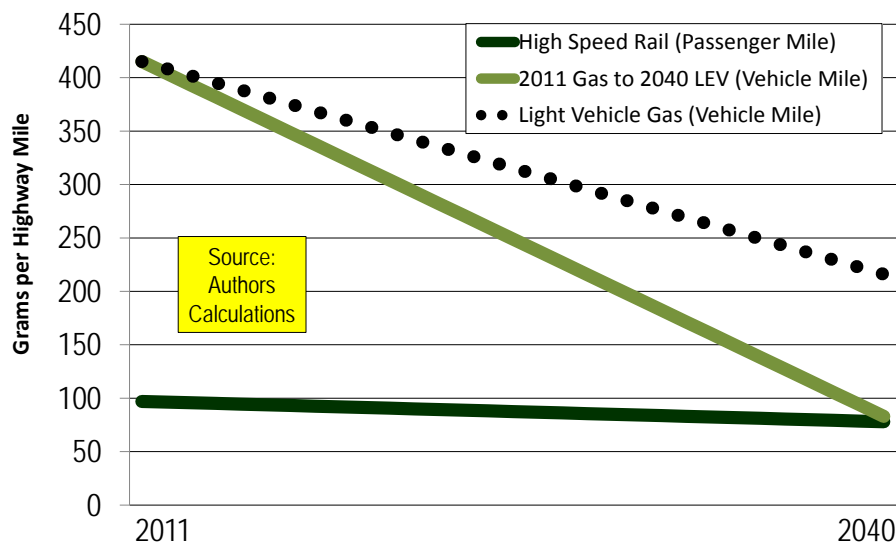


Figure 3

The conventional "static" GHG emissions reduction forecasting method used by CHSRA produces results that imply California will not reach its GHG emissions reductions objectives. Indeed, were the GHG emissions reduction scenario to emerge on which the CHSRA static forecasts are based, ***California's GHG emissions reduction program will have resulted in material failure.*** This is because CHSRA assumes future automobile fuel economy improvements that are far more pessimistic than state policy requires. Dynamic forecasting, on the other hand, assumes that California will reach its policy objectives, which the Brown Administration and CARB are determined to accomplish.

4. ALTERNATIVE GHG EMISSIONS REDUCTION FORECASTS

²⁵ The highly touted Madrid to Barcelona high speed rail line has an average load factor of approximately 60 percent, according to Frontier Economics, Atkins ITS (March 2011), *Appendix I: High Speed Railway Madrid-Barcelona*, European Commission, http://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/expost2006/wpb_cs1_barcelona.pdf. Other high speed rail systems also have considerably lower load factors. See Wendell Cox and Joseph Vranich, *The California High Speed Rail Proposal: A Due Diligence Report* (2008), Reason Foundation, <http://reason.org/files/1b544eba6f1d5f9e8012a8c36676ea7e.pdf>.

²⁶ Highway vehicle mile is used because CHSRA forecasts most of its travelers will have previously traveled by car. High speed rail travel requires longer distances than highway travel (for example, from San Francisco to Los Angeles the highway distance is approximately one-quarter shorter than by high speed rail. For highway travel, the appropriate comparison is highway miles, rather than miles of travel by train. It is conservatively assumed that *all* travelers attracted from cars to high speed rail would be drivers. The airline distance between San Francisco and Los Angeles is approximately one-third shorter than high speed rail). These longer distances increase GHG emissions from high speed rail.

The expected impacts of California's policy initiatives and the tendency of passenger forecasts to the overly optimistic suggest the necessity of alternative GHG emissions reduction forecasts.

4.1 Forecast Categories

Two general categories of forecasts are presented. The first category, "Dynamic Forecasts," is based on the underlying assumption that California will achieve its 2050 GHG emissions reduction target. The second category, "Static Forecasts," is limited to the effects of already adopted measures. These categories and three scenarios within each are illustrated in Table 1.

Table 1 California High Speed Rail GHG Emission Reduction Scenarios	
DYNAMIC FORECASTS	
Assumptions	Adoption of additional specific strategies necessary to achieve California's 2050 GHG emission reduction objective.
Implication	That the state will achieve its 2050 GHG emissions objective and will be on a trajectory to achievement in 2040
SCENARIOS	A-1: CHSRA (Scenario [B-1] adjusted for California 2050 policies): Insufficient Information
	A-2: Adjusted CHSRA (Scenario [B-1] adjusted for California 2050 policies)
	A-3: International Experience (Scenario [B-1] adjusted for California 2050 policies)
STATIC FORECASTS	
Assumptions	Impacts of legally binding strategies that have been adopted by government agencies.
Implication	That the state will fall far short of achieving its 2050 GHG emissions reduction objective.
SCENARIOS	B-1: CHSRA (CHSRA midpoint ridership forecast with CHSRA GHG emissions reduction forecast)
	B-2: Adjusted CHSRA (CHSRA midpoint ridership forecast with independent GHG emissions reduction forecast)
	B-3: : International Experience (International ridership forecast & independent GHG emissions reduction forecast)

A model was developed to estimate the GHG emissions reduction from the lower level light vehicle and airline for which high speed rail travel is substituted. Ridership data is from the CHSRA's *2014 Business Plan*,²⁷ which included updated forecasts between regions of California for 2040.²⁸ Based on these projections, this report provides independent estimates of high speed rail GHG emissions reductions at ridership indicated in the scenarios.

The model estimates the increase in GHG emissions reductions from the electricity generated and transmitted to power the trains,²⁹ other operating functions, such as stations, maintenance facilities and maintaining rail rights of way, as well as the additional light vehicle use that occurs as rail riders travel to stations to meet their trains. The methodology is described in Appendix A.

4.2 Dynamic Forecasts and Results

The Dynamic Forecasts assume that California will achieve its 80 percent GHG emissions reduction by 2050 and will be on a trajectory toward that accomplishment in 2040. Each of the Dynamic Forecasts

²⁷ *2014 Business Plan*

²⁸ Projected ridership between stations is not provided.

²⁹ High speed rail's electricity consumption (and thus its indirect GHG emissions) are increased by its less direct routing. Trains will travel approximately 505 miles from Los Angeles to San Francisco. This compares to a more direct 345 miles by airline and 380 miles by highway.

represents an attempt to replicate the projections in CARB's *Vision for Clean Air*.³⁰ It can be expected that the GHG emissions reductions from high speed rail under the Dynamic Forecasts will be significantly lower than under the Static Forecasts (The methodology is described in Appendix A).

This is because the GHG emissions that occur from light vehicles drop much more rapidly than the emissions from the high-speed rail system, as the conversion to ZEV vehicles continues (Figure 3, above). Once the ultimate ZEV share of the vehicle fleet is achieved, high-speed rail and light vehicle GHG emissions will be similar and can be expected to rise or fall at the same rate.³¹ Further, it is expected that airline GHG emissions per passenger mile will also improve, although not as substantially that of light vehicles.

The Dynamic Forecast scenarios and corresponding GHG emissions reduction results are as follows:

(A-1) CHSRA Scenario: The CHSRA scenario would have adjusted Scenario B-1 (ridership assumed at the CHSRA midpoint) for consistency with the 2040 trajectory required for achievement of California's 2050 GHG emissions reduction objective (an 80 percent decline). CHSRA's GHG emissions reduction report³² does not provide sufficient information to report a figure for Scenario A-1.

(A-2) Adjusted CHSRA Scenario: The Adjusted CHSRA scenario revises Scenario B-1 (ridership assumed at the CHSRA midpoint) for consistency with the 2040 trajectory required for achievement of California's 2050 GHG emissions reduction objective (an 80 percent decline). The 2040 annual reduction in high speed rail GHG emissions for Scenario B-2 is forecast at approximately 250,000 tonnes. As indicated in Box 1, this ridership would be much lower due to substantial reductions in the cost of driving relative to high speed rail that are expected to result from the CARB ZEV program. This would make the GHG emissions reductions from high speed rail smaller and could even result in an increase in GHG emissions (Section 3.3).

(A-3) International Experience Scenario: The International Experience scenario adjusts Scenario B-1 (ridership assumed at the international experience level) for consistency with the 2040 trajectory required for achievement of California's 2050 GHG emissions reduction objective (an 80 percent decline). The 2040 annual reduction in high speed rail GHG emissions for Scenario A-3 is forecast at approximately 120,000 tonnes. As indicated in Box 1, this ridership could be much lower due to substantial reductions in the cost of driving relative to high speed rail that are expected to result from the CARB ZEV program. This would make the GHG emissions reductions from high speed rail smaller and could even result in an increase in GHG emissions (Section 3.3).

4.3 Static Forecasts and Results

The Static Forecast GHG emissions scenarios are limited to the specific measures that have already been adopted by the state, CARB and the federal government. As noted in Section 2, in these measures will not be sufficient to meet California's 2050 GHG emissions reduction objectives.

³⁰ California Air Resources Board, *Vision for Cleaner Air*, <http://www.arb.ca.gov/planning/vision/vision.htm> and http://www.arb.ca.gov/planning/vision/docs/draft_scenario_assumptions_and_results_appendix.pdf and http://www.arb.ca.gov/planning/vision/docs/vision_for_clean_air_public_review_draft.pdf

³¹ This assumes a constant relationship between high speed rail ridership and automobile use.

³² California High Speed Rail Authority (June 2013), *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels*, http://www.hsr.ca.gov/docs/programs/green_practices/HSR_Reducing_CA_GHG_Emissions_2013.pdf.

The Static Forecast scenarios and corresponding GHG emissions reduction results are as follows:

(B-1) CHSRA Scenario: The CHSRA Scenario (Static Forecast) is limited to the effects of already adopted measures and assumes that no further policies to improve GHG emissions will be adopted by CARB, EPA or any other regulatory authority before 2040. CHSRA's 2040 GHG emissions reduction and midpoint 2040 ridership forecasts are assumed. The 2040 annual reduction in high speed rail GHG emissions for Scenario B-2 is forecast at approximately 1.54 million tonnes (the estimated midpoint for 2040 from the CHSRA GHG emissions reduction report³³).

(B-2) Adjusted CHSRA Scenario: The Adjusted CHSRA Scenario (Static Forecast) is limited to the effects of already adopted measures and assumes that no further policies to improve GHG emissions will be adopted by CARB, EPA or any other regulatory authority before 2040. The scenario assumes an independent GHG emissions reduction based on current government and others forecasts and uses the CHSRA 2040 midpoint ridership (as in Scenario A-2). The 2040 annual reduction in high speed rail GHG emissions for Scenario B-2 is forecast at approximately 0.59 million tonnes.

(B-3) International Ridership Scenario: The International Ridership Scenario (Static Forecast) is limited to the effects of already adopted measures and assumes that no further policies to improve GHG emissions will be adopted by CARB, EPA or any other regulatory authority before 2040. The scenario assumes an independent GHG emissions reduction based on current government and others forecasts uses the CHSRA ridership forecast reduced to account for the average inaccuracy indicated in the international research (Box 1). The 2040 annual reduction in high speed rail GHG emissions for Scenario B-3 is forecast at approximately 0.29 million tonnes.

<p>Box 1 Ridership Projections</p>
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<p>CHSRA ridership projections have been criticized for years as too optimistic. International research has indicated that passenger rail programs are routinely projected to carry many more passengers than they usually do. This is acknowledged in the "peer group report" appended to the <i>2014 Business Plan</i>, which references <i>Megaprojects and Risk: An Anatomy of Ambition</i>, the authoritative volume on the subject of infrastructure forecasting errors (both ridership and cost).³⁴ The principal author, Bent Flyvbjerg and associates have the research, which provides further illustration of the excessive optimism typical of rail passenger projections (Figure 4), indicating that 70 percent of projects have been more than 40 percent inaccurate in their passenger projections.³⁵ On average, passenger rail projects were found to draw 51.4</p>
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³³ California High Speed Rail Authority (June 2013), *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels*, http://www.hsr.ca.gov/docs/programs/green_practices/HSR_Reducing_CA_GHG_Emissions_2013.pdf.

³⁴ Bent Flyvbjerg, Nils Bruzelius and Werner Rothengatter, *Megaprojects and Risk: An Anatomy of Ambition*, (Cambridge, UK: Cambridge University Press, 2003)

³⁵ One of the most egregious cases of ridership over-projection is the London to Paris and Brussels *Eurostar*, which operates through the Channel Tunnel. As of 2011, *Eurostar's* ridership remained 60 percent below the original projection made for 2006. See: Joseph Vranich & Wendell Cox, "California High Speed Rail: An Updated Due Diligence Report," Reason Foundation (2013), http://reason.org/files/california_high_speed_rail_report.pdf.

percent fewer riders than projected.³⁶ This figure is used for the International Ridership Scenarios in this report (calculated from the CHSRA Midpoint ridership forecasts).

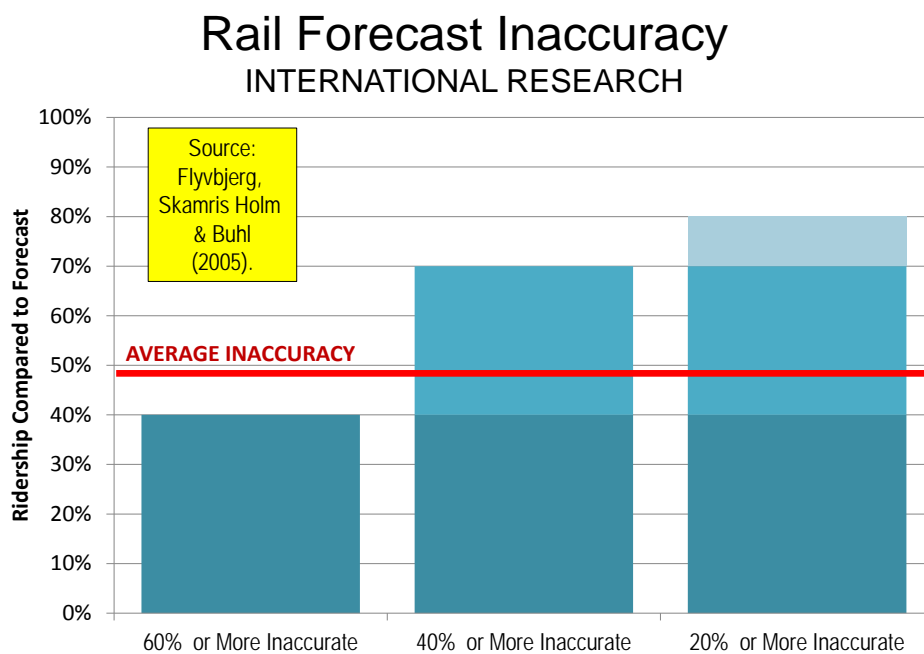


Figure 4

Further, CARB's ZEV program could substantially reduce the cost of travel by light vehicle. For example, the present fuel cost of travel by electric vehicles is approximately half that.³⁷ This would reduce the forecast attraction of high speed rail, because its fares would be higher relative to the cost of traveling by light vehicle and could substantially reduce high speed rail ridership. This would reduce or eliminate GHG emissions reductions from high speed rail.

The estimated GHG emissions reductions are indicated in Figure 5, Table 2 and Appendix Table B-1.

³⁶ Bent Flyvbjerg, Mette Skamris Holm, Søren L. Buhl (2005), How (In)accurate Are Demand Forecasts in Public Works Projects? The Case of Transportation, <http://www.tandfonline.com/doi/abs/10.1080/01944360508976688#.UwjoLvldV5s>.

³⁷ Assumes electricity consumption by light vehicles of 30 kilowatt hours per 100 miles.

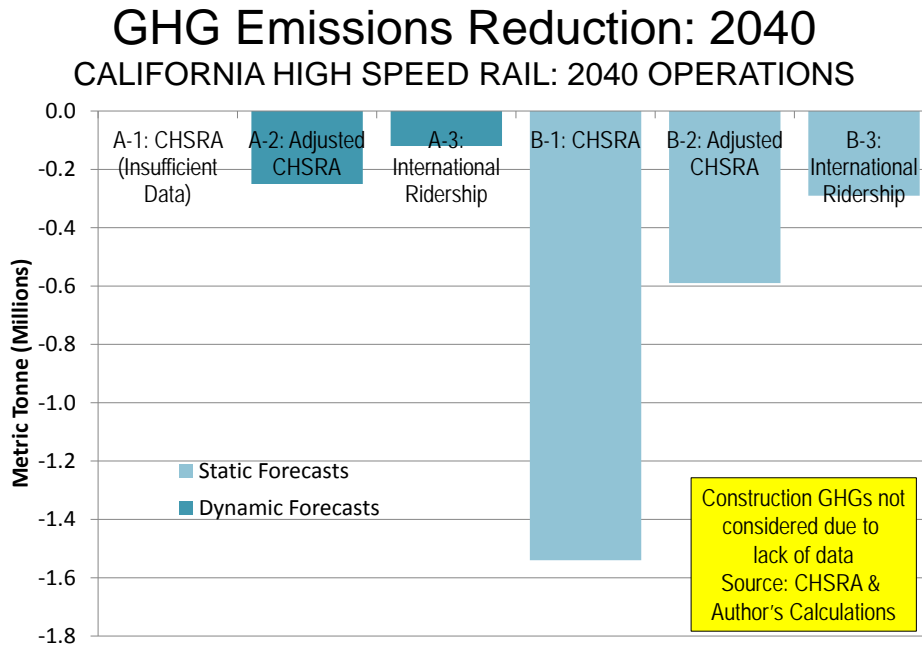


Figure 5

Table 2			
Greenhouse Gas Emission Reductions from High Speed Rail: 2040			
Scenarios	CHSRA	Adjusted CHSRA	International Experience
Dynamic Forecasts	Insufficient Information	-0.25	-0.12
Static Forecasts	-1.54	-0.59	-0.29
In millions of metric tonnes			
Phase 1 Blended System			
Construction GHGs not considered due to lack of data.			
Sources: CHSRA and author's calculations			

5. COST EFFECTIVENESS OF HIGH SPEED RAIL GHG EMISSIONS REDUCTIONS

As is noted above, California's GHG emissions reduction objectives are aggressive and will be challenging to meet.

5.1 The Importance of Cost Effectiveness

The chances that California's objective will be enhanced if the strategies selected are the most cost effective. A prioritization by cost-effectiveness is key for two reasons.

(1) The funds for reducing GHG emissions are limited. Expenditures on strategies that are not optimally cost-effective reduce the GHG emission reduction that is possible. In effect, less cost effective strategies "crowd out" the cost effective strategies.

(2) The use of less cost effective strategies necessarily increases the cost of reducing GHG emissions. These higher costs will take a toll on the economy, requiring higher levels of mitigation fees and taxation, resulting in an overall lower standard of living (as measured by discretionary household income) and higher rates of poverty.

There is general agreement that the GHG emissions reduction requires that cost-effectiveness metrics be applied to proposed strategies. For example:

The European Conference of Ministers of Transport said in a policy document: *It is important to achieve the required emissions reductions at the lowest overall cost to avoid damaging welfare and economic growth.*³⁸

CARB has also stressed the importance of cost effectiveness in its *February 2014 Scoping Report*.

5.2 The Cost of Reducing GHG Emissions

The most common metric for GHG emissions reduction is the cost per metric ton. There are various cost effectiveness estimates for reducing GHG emissions, which are taken at face value in this report:

1. McKinsey & Company has estimated GHG emissions sufficient to achieve IPCC recommended reduction rates to 2030 can be achieved at an average cost of *minus* \$9 per ton, with a range of from minus \$250 to plus \$116.³⁹ McKinsey & Company estimated that 35 percent of the reductions were possible for less than \$0. 40 percent from \$0 to \$29 and 10 percent from \$29 to \$58.⁴⁰
2. Carbon credits can be purchased, with the intention of reducing GHG emissions by one ton per credit. This is the mechanism CHSRA intends to use to offset its GHG emissions from construction, through tree planting programs. Carbon credits can also be purchased by consumers to offset the GHG emissions from air travel. The cost per ton of GHG emissions

³⁸ European Conference of Ministers of Transport (2006), *Transport and Environment: Review of CO2 Abatement Policies for the Transport Sector Conclusions and Recommendations*, European Council of Ministers of Transport. <http://www.internationaltransportforum.org/Topics/pdf/07CO2summary.pdf>

³⁹ The original figures are stated in 2006 Euros and converted here to 2013\$. See: McKinsey and Company (2010), *The Impact of the Financial Crisis on Carbon Economics: Version 2.1 of the Global Greenhouse Gas Abatement Cost Curve*, http://www.mckinsey.com/~media/McKinsey/dotcom/client_service/Sustainability/cost%20curve%20PDFs/ImpactFinancialCrisisCarbonEconomicsGHGcostcurveV21.ashx

⁴⁰ The United Nations Intergovernmental Panel on Climate Change (IPCC) indicated that there is a high level of confidence that a cost range of \$20 to \$50 annually per GHG ton "reached globally in 2020–2030 and sustained or increased thereafter would deliver deep emission reductions by midcentury. Terry Barker, Igor Bashmakov, et al, "Mitigation from a cross-sectoral perspective," Intergovernmental Panel on Climate Change, 2008, www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter11.pdf p. 660

reduction is approximately \$13.⁴¹ This is slightly higher than the clearing price in the November 2013 California cap and trade auction (\$11.48).

There are indications that the costs above may be higher than necessary. United States Environmental Protection Agency (EPA) and CARB programs are expected to reduce GHG emissions at costs of *less than zero*.

Two Obama administration regulatory actions have been adopted to improve light vehicle fuel efficiency through 2017 and 2025. Under each of these already adopted regulations, the EPA estimated that the cost for GHG emission ton removed would be approximately *minus* \$200 by 2040 and *minus* \$300 by 2050.⁴²

CARB has estimated that its ZEV vehicle program will produce consumer savings that are more than double its costs, which like the EPA programs, means that costs were negative.⁴³

In short, it does not appear to be necessary to spend more than an average of near zero per ton of GHG emissions reduction.

5.3 Cost Effectiveness of GHG Emissions Reductions from High Speed Rail

As in the case of the GHG emissions reduction analysis above, costs are estimated for the year 2040 and indicated in year 2013 constant dollars. Generally, the cost of high-speed rail is the total annual capital and operating costs of the system minus costs that are saved as a result of a reduction in light vehicle use and airline flights (The methodology is described in Appendix A).

These costs are divided by the GHG emissions reductions projected for each scenario in Section 4. The results of the cost analysis are:

Dynamic Forecasts: Under the dynamic forecasts, the cost per tonne of GHG emission reductions would range from \$7,100 to \$18,600. As is indicated in Section 6, these figures are many times international metrics for cost effective GHG emission reductions.

Static Forecasts: Under the static forecasts, which assume today's policies and no further initiatives to improve automobiles fuel economy, the cost per tonne of GHG emissions would range from \$1,000 to \$8,000. These figures are also many times international metrics for cost effective GHG emission reductions.

The net high speed rail costs are illustrated in Table 3. The costs per tonne are indicated by scenario in Figure 6, Figure 7, Table 4 and Appendix Table B-2.

⁴¹ See "Terrapass.com," <http://www.terrapass.com/shop/>, accessed February 22, 2014.

⁴² US Environmental Protection Agency, *Regulatory Impact Analysis: Final Rulemaking for 2017-2025 Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards*, <http://www.epa.gov/otaq/climate/documents/420r12016.pdf> and *Final Rulemaking to Establish Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards Regulatory Impact Analysis*, <http://www.epa.gov/otaq/climate/regulations/420r10009.pdf>

⁴³ California Air Resources Board (2012), *Proposed LEV III Economic Analysis: Technical Support Document*, <http://www.arb.ca.gov/regact/2012/leviiiighg2012/levapps.pdf>

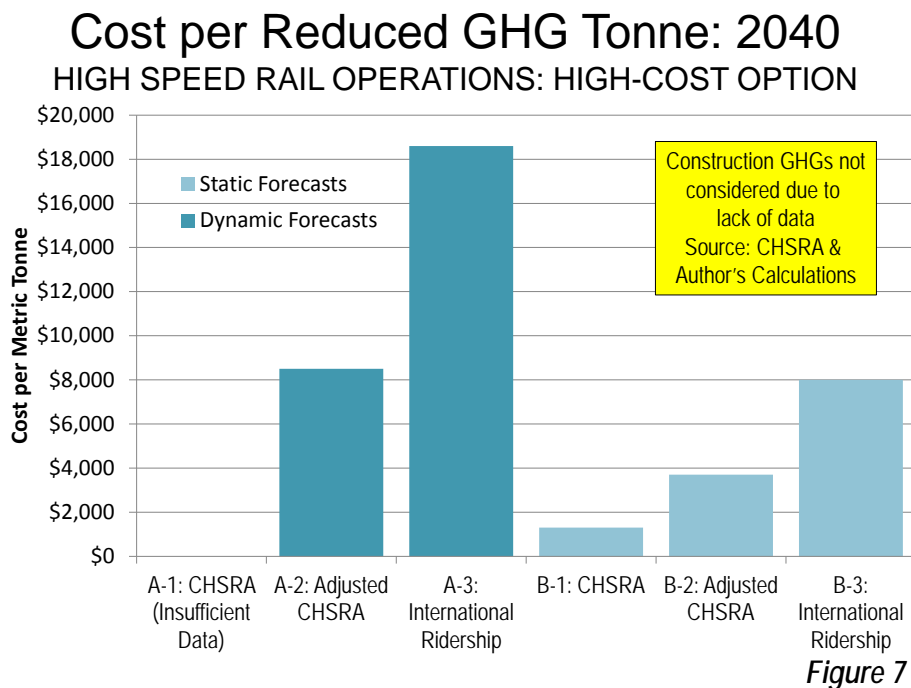
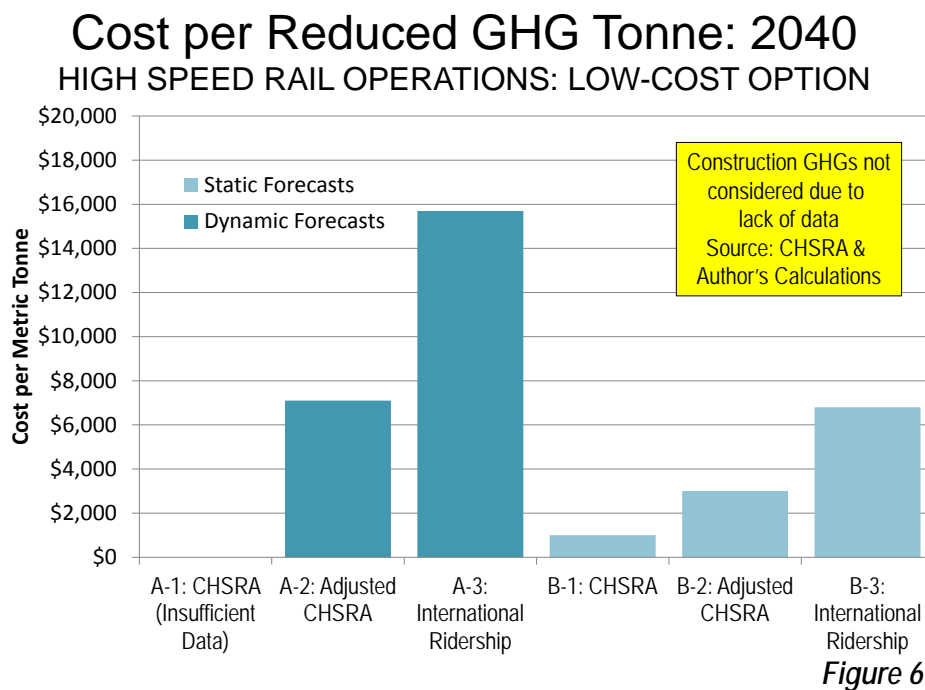


Table 3			
Costs of Greenhouse Gas Emission Reductions from High Speed Rail: 2040 (2013\$)			
	CHSRA	Adjusted CHSRA	International Experience
Low Capital Cost Option	\$1.57	\$ 1.78	\$ 1.96
High Capital Cost Option	\$1.93	\$ 2.14	\$ 2.31
In billions of 2013\$			
Sources: CHSRA and author's calculations			

Table 4			
Cost per Metric Tonne of Greenhouse Gas Emission Reductions from High Speed Rail: 2040 (2013\$)			
	CHSRA	Adjusted CHSRA	International Experience
Low Capital Cost Option			
Dynamic Forecasts	Insufficient Information	\$ 7,100	\$ 15,700
Static Forecasts	\$ 1,000	\$ 3,000	\$ 6,800
2013\$			
High Capital Cost Option			
Dynamic Forecasts	Insufficient Information	\$ 8,500	\$ 18,600
Static Forecasts	\$ 1,300	\$ 3,700	\$ 8,000
2013\$			
Construction GHGs not considered due to lack of data.			
Sources: CHSRA and author's calculations			

6. PRIORITIZING GHG EMISSIONS REDUCTION STRATEGIES

The Legislative Analyst's Office recommended that GHG emissions reductions program be prioritized based on their cost effectiveness, in analyzing the Governor's 2012-2013 budget proposal to use cap and trade revenues for high speed rail.

... we recommend that the Legislature prioritize GHG mitigation programs that have the greatest potential return on investment in terms of emission reductions per dollar invested.⁴⁴

The Legislative Analyst's Office continues, stressing the importance of avoiding unnecessary economic disruption by a rational prioritization of projects:⁴⁵

In order to minimize the negative economic impact of cap-and-trade, it is important that auction revenues be invested in a way that maximizes GHG emission reductions for a given level of spending.

⁴⁴ Legislative Analyst's Office, *The 2012-13 Budget: Funding Requests for High-Speed Rail*, <http://www.lao.ca.gov/analysis/2012/transportation/high-speed-rail-041712.aspx>

⁴⁵ Mac Taylor (February 24, 2014), *The 2014-15 Budget: Cap-and-Trade Auction Revenue Expenditure Plan*, Legislative Analyst's Office, <http://www.lao.ca.gov/reports/2014/budget/cap-and-trade/auction-revenue-expenditure-022414.aspx>.

Given these concerns, we recommend that the Legislature direct ARB to develop metrics for departments to use in order to prospectively evaluate the potential GHG emission benefits of proposed projects, as well as direct the board to establish a set of guidelines for how departments should incorporate these metrics into their decision-making processes. Having such metrics to use as part of departments' decision-making processes when determining how program funding will be spent would provide greater certainty regarding the potential GHG emission reductions of projects being considered for funding

Such a program is a necessary pre-condition to any serious and defensible program for meeting the state's GHG emissions reduction objectives.

The high-speed rail system has not been prioritized based on its cost effectiveness compared to other strategies for reducing GHG emissions. Yet, the costs per ton of GHG emissions reduction from high speed rail is substantially higher than both the metrics and the experience in EPA and CARB programs cited above. The cost of high-speed rail GHG emissions reduction is from 75 to 1,400 times that of current market offset programs such as purchasing carbon offsets (Table 5).

Table 5				
Comparison: Cost of GHG Emissions Reductions per Tonne				
	Low Capital Cost Option	HSR Times Carbon Offset Programs	High Capital Cost Option	HSR Times Carbon Offset Programs
Abatement Cost				
EPA Fuel Economy Standards 2040	-\$200		-\$200	
Carbon Offsets per Tonne	\$13	1	\$13	1
California AB32 Cap & Trade Auction (November 2013)	\$11		\$11	
McKinsey & Company Average	-\$9		-\$9	
UN IPCC	\$20 - \$50		\$20 - \$50	
Dynamic Forecasts				
A-1: CHSRA	Insufficient Information	Insufficient Information	Insufficient Information	Insufficient Information
A-2: CHSRA Adjusted	\$7,100	537	\$8,500	643
A-3: International Experience	\$15,700	1,188	\$18,600	1,408
Static Forecasts				
B-1: CHSRA	\$1,000	76	\$1,300	98
B-2: CHSRA Adjusted	\$3,000	227	\$3,700	280
B-3: International Experience	\$6,800	515	\$8,000	606
Construction GHGs not considered due to lack of data.				
Sources: Authors calculations and text				

Diverting Cap and Trade Funds

The proposal in the 2012 – 2013 budget to fund the high-speed rail from cap and trade revenues was dropped after political opposition. Yet, the 2013 – 2014 budget included a loan from cap and trade funding to the state for general purposes. There is also the 2014 – 2015 budget proposal to transfer \$250 million of cap and trade revenues to high-speed rail. In addition, the Administration has indicated that cap and trade funds should become an even larger share of high-speed rail funding in the future.⁴⁶

⁴⁶ Chris Megerian and Ralph Vartabedian (February 24, 2014), "Gov. Jerry Brown wants polluters' fees to help fund high-speed rail," <http://www.latimes.com/local/la-me-brown-rail-20140228,0,4977021.story#ixzz2ubyMC1e8>.

As indicated above, GHG emission reductions from high-speed rail are far more expensive than necessary and the improvements in light vehicle emissions from CARB policies will substantially diminish these reductions in future years (Section 3.3). The result is an egregiously inefficient use of cap and trade revenues.

The context of the \$250 million is illustrated by the fact that it is sufficient to purchase carbon offsets at the current market rate nearly equal to 90 percent of the GHG emissions reduction required between 2011 and 2020.⁴⁷

To place this in terms parallel to those expressed by CHSRA, the GHG emissions reduction from the \$250 million in cap and trade revenue, spent on carbon credits would *before 2020* be the equivalent of 3,800,000 cars taken off the road annually.⁴⁸ That many cars would stretch 38,000 miles on a single highway lane – equal to circling the world 1.5 times – and is nearly equals the total number of light vehicles in the San Francisco and San Jose metropolitan areas.⁴⁹ (As noted above, CHSRA stated that in its first year of operations [2022], high-speed rail would reduce GHG emissions by the equivalent of 31,000 cars, which it said would stretch 100 miles on a single lane highway).

Longer Term Implications

The longer term impacts are even more stark. This is illustrated by applying the costs of high speed rail GHG emissions reductions in 2040 to the reductions required to achieve the 2050 state objective of an 80 percent reduction.

Based on the 1990 statewide GHG emissions figure, the 80 percent reduction to 2050 would represent approximately 340 million annual tonnes.

The longer run cost intensity is illustrated by applying the minimum high speed rail 2040 costs per tonne (CHSRA Scenario [B-1]) to 80 percent annual 2050 GHG emissions reduction required by state policy from 1990. This calculates to nearly \$350 billion (2013\$), which is approximately 1/7 the present size of California's gross domestic product (GDP). Under the more likely Dynamic Forecast: International Ridership Scenario (A-3) the cost would be up to \$6.2 trillion (2013\$). This is up to three times the size of California's GDP, larger than the GDP of Japan and larger than the output of every country in the world except for the United States and China in 2013.

High Speed Rail: A Temporary Strategy? By 2040 the gap between high-speed rail GHG emissions and light vehicle GHG emissions per passenger mile that is presently so large will have been substantially closed. Within the next decade, further improvements in fuel economy are expected by CARB, which would lead to a virtual elimination of the GHG emissions advantage of high speed rail over cars (at any level of ridership). Thus, high-speed rail would no longer make even its modest commitment to GHG

⁴⁷ In 2011, the statewide GHG emissions were 448 million tonnes. The 2020 objective is 427 million tonnes. At \$13.21 per tonne for a tree planting program (as CHSRA intends to use to abate its construction GHG emission increases), approximately \$275 million would be required. The proposed \$250 million cap and trade funds expenditure of \$250 million is approximately 90 percent of \$275 million.

⁴⁸ This calculation uses the automobile GHG emissions and lane capacity assumptions in California High Speed Rail Authority (June 2013), *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels*,

⁴⁹ According to the US Census Bureau American Community Survey, households in the San Francisco and San Jose metropolitan areas had slightly fewer than 4.0 million vehicles available in 2012. At 5 metric tonnes of GHG annually, the 20 million annual emissions would be 20 million tonnes. This compares to the 19 million tonne reduction required in 2020 relative to 2011.

emissions reductions by the 2060 planning horizon indicated in the *2014 Business Plan*. The impact of high-speed rail on GHG emissions reductions could thus be only temporary, yet hugely expensive.

Political Sustainability

The purpose of California's GHG emissions reduction program is environmental sustainability. Yet, in the final analysis, the survival of public policies requires sufficient public support. Environmental sustainability rests on a foundation of political sustainability.

Appropriation of cap and trade revenues to cost-inefficient strategies such as high-speed rail may not be politically sustainable. A perception that cap and trade revenues are simply a source of funds subject to political whim could fuel political pressure that leads to dilution or abandonment of the state GHG emissions reduction objectives. Over the three and one-half decades between now and 2050, there will be countless opportunities for "raids" on cap and trade revenues.

Moreover, such developments could worsen California's business climate and competitive position relative to other states. Business expansion and site selection in the state could be discouraged by fear that the failure to properly use cap and trade revenues, which are meant to mitigate GHG emissions, would create a demand for even greater financial or regulatory burdens.

7. THE IMPERATIVE FOR COST-EFFECTIVENESS AND REALISM

The Legislative Analyst's Office concluded that the high-speed rail project would contribute little to the GHG emissions reductions in the state,⁵⁰ a conclusion echoed in this report. High-speed rail would not advance the objectives of AB32 because its reductions would all occur after its 2020 deadline. Further, high-speed rail would retard achieving AB32 objectives by using cap and trade funds for purposes that cannot compete in an objective prioritization of cost-effective uses.

The longer-term implications are even more counter-productive. At most, high-speed rail would contribute one half of one percent (0.5 percent) of the required GHG emissions required in 2050 (Figure 8).⁵¹ The greater likelihood is that the contribution will be much smaller, due not only to the likely over-projection of ridership, but also the diminishing, if not disappearing gap between GHG emissions reductions per mile traveled on high speed rail versus light vehicles (Section 3.3). This anticipated policy outcome illustrates the importance of GHG emissions analysis that is dynamic, rather than static. Planning and analysis can only be justified to the extent that it is based in reality.

It is not surprising that high-speed rail is so costly as a strategy for reducing GHG emissions. The most important national and state strategies for reducing GHG emissions from transportation --- programs by the EPA and CARB to improve fuel economy --- are projected to reduce GHG emissions at negative costs of more than \$200 per tonne. By contrast, California's high speed rail line would result in comparatively small reductions in the state by comparison, yet would require substantial capital and operating costs.

⁵⁰ Legislative Analyst's Office, *The 2014-15 Budget: Overview of the Governor's Budget 2014-5*, <http://www.lao.ca.gov/reports/2014/budget/overview/budget-overview-2014.aspx>

⁵¹ This would require the achievement of CHSRA's midpoint GHG emissions reduction forecast in 2050, which is highly unlikely (as this report indicates).

High-speed rail would be a hideously expensive strategy that would consume resources that could be more effectively used to reduce GHG emissions. The use of cap and trade revenues for any use other than the most effective suggests a lack of seriousness toward GHG emissions reduction. There is no doubt that reaching California's goals will be challenging. Success is not guaranteed. If California's GHG emissions reduction goals are imperative, then it is equally imperative that they be pursued with the maximum cost effectiveness.

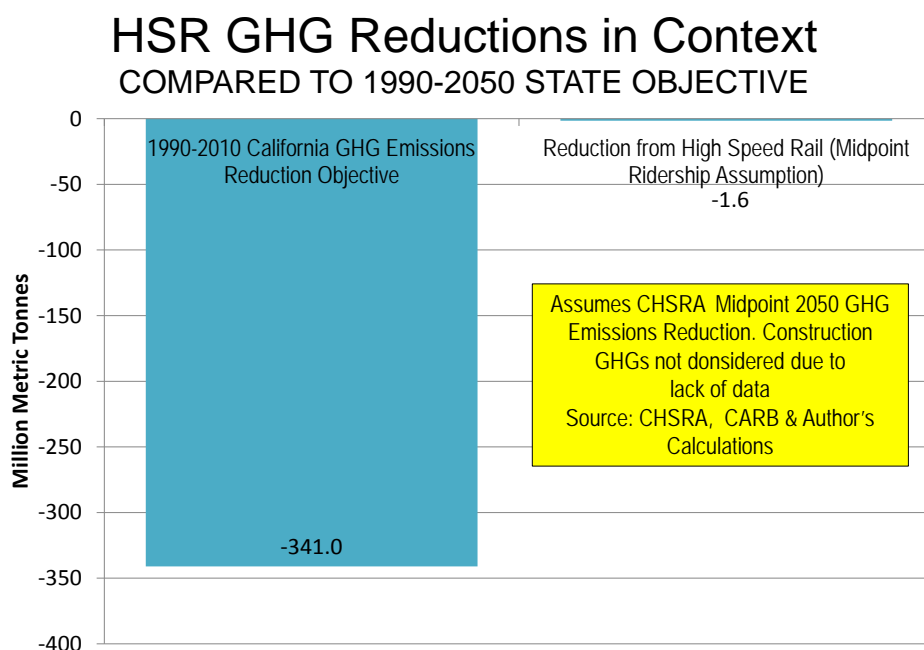


Figure 8

8. LEGALITY OF CAP AND TRADE FUNDING FOR HIGH SPEED RAIL

The principal purpose of this report is to assess the GHG emissions reduction potential of the California high-speed rail line and the relative costs per tonne of any such reduction. There are also considerable legal issues with respect to the use of cap and trade revenues, as proposed by the Brown Administration.

Use of AB32 cap and trade revenues for high-speed rail could be illegal. The Legislative Counsel has advised the Legislative Analyst's Office that funds from cap and trade auctions are "mitigation fees," and that their use for high-speed rail could be illegal.

Use of cap and trade revenues for high-speed rail may be legally challenged as an inappropriate use of "mitigation fees." The Legislative Counsel has advised the Legislative Analyst's Office that funds from cap and trade auctions are "mitigation fees," and that their use for high-speed rail could be illegal for failure to meet the "Sinclair nexus test." A subsequent court ruling found that cap and trade revenues are not taxes.⁵²

⁵² Legislative Analyst's Office, *The 2012–13 Budget: Cap-and-Trade Auction Revenues*, <http://www.lao.ca.gov/analysis/2012/resources/cap-and-trade-auction-revenues-021612.aspx>

Further, using cap and trade funds for high-speed rail could violate the intent of the authorizing legislation, AB32. According to the Legislative Analyst's Office:

The primary goal of AB 32 is to reduce California's GHG emissions statewide to 1990 levels by 2020. Under the revised draft business plan, the IOS would not be completed until 2021 and Phase 1 Blended would not be completed until 2028. Thus, while the high-speed rail project could eventually help reduce GHG emissions somewhat in the very long run, given the project's timeline, it would not help achieve AB 32's primary goal of reducing GHG emissions by 2020. As a result, there could be serious legal concerns regarding this potential use of cap-and-trade revenues. It would be important for the Legislature to seek the advice of Legislative Counsel and consider any potential legal risks,⁵³

In addition to the potential legal problems with using AB32 revenues for high speed rail, high speed rail is not a cost effective GHG emissions reduction strategy (Section 6).

APPENDIX A: METHODOLOGY

CHSRA does not provide a sufficiently detailed methodology to replicate their GHG emissions impacts. As a result, a model was developed for this report that estimates GHG emissions impacts from other information in CHSRA documentation and other sources.

GHG Emissions Impact Estimates

The year 2040 is chosen for analysis, because the *Draft 2014 Business Plan* provides detailed ridership projections between the major markets. These ridership data are used to estimate the extent of passenger travel (in passenger miles). For simplicity, all longer distance demand (more than 300 miles) is assumed to have been diverted from airlines and all shorter distance demand from light vehicles.

CHSRA's June 2013 report did not specifically denote its projected GHG emissions reduction for 2040. However, information was provided for 2035 and 2050, making it possible to estimate a figure for 2040. It is assumed that the CHSRA 2040 figure for GHG emissions reduction would range from 1.18 million annual tonnes to 1.90 million annual tonnes.⁵⁴

Static Forecasts: The reduced GHG emissions that would occur from the transfer of riders to high-speed rail is then estimated for each of the former modes of travel under the Static Forecasts.

Former light vehicle drivers: CO2 emissions are estimated using a base of the 2040 US Department of Energy, Energy Information Administration (*2014 Annual Energy Outlook*) projected mile for the light vehicle stock of 216 grams per vehicle mile.⁵⁵ This figure is increased 5 percent to account for the difference between CO2 emissions and CO2 equivalent emissions,

⁵³ Legislative Analyst's Office, *The 2012-13 Budget: Funding Requests for High-Speed Rail*, <http://www.lao.ca.gov/analysis/2012/transportation/high-speed-rail-041712.aspx>

⁵⁴ California High Speed Rail Authority (June 2013), *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels*,

⁵⁵ US Department of Transportation, Energy Information Administration, *Annual Energy Outlook 2014*.

because greenhouse gases other than CO₂ are not included.⁵⁶ All of the miles driven are then adjusted by the share of travel in city driving versus highway driving. Each of these figures is then reduced by 10% to account for the impact of the California Low Carbon Fuel Standard. It is assumed that all train travelers attracted from cars had driven alone previously.

Former airline passengers: CO₂ emissions are estimated using data from the *SAS Advanced Emission Calculator* for flights in California.⁵⁷ This figure is adjusted downward by approximately 6 percent to account for the improvement in airline fuel efficiency to 2040 as indicated in the *2014 Annual Energy Outlook*, and increased 5 percent to account for the difference between CO₂ emissions and CO₂ equivalent emissions.

Amtrak: New GHG emissions reductions are assumed for passengers transferring from conventional (Amtrak) services to high-speed rail. Amtrak's "San Joaquin" service operates from Oakland to Bakersfield and serves stations that would not be served by high-speed rail, including Oakland, Emeryville, Richmond, Martinez, Antioch-Pittsburg, Stockton, Turlock, Modesto, Merced, Corcoran and Wasco. It is assumed that Amtrak trains will continue to operate without service reductions and as a result there would be little or no reduction in GHG emissions from passengers who use high-speed rail instead.

Induced Travel: All other travel on high-speed rail would be by passengers who would not have made the trip if the high-speed rail system had not been available. Because these induced travelers did not travel previously, it is assumed that there would be no change in GHG emissions.

Light Vehicle Access to High Speed Rail Stations: Additional light vehicle travel will be required traveling to and from high-speed rail stations. This will increase GHG emissions. Overall, it is assumed that 75 percent of station access will be by light vehicle. For origins or destinations without high speed rail stations, the one way travel distance between the nearest station and the urban center is used (such as San Diego and Sacramento. Between the San Francisco Bay Area and Los Angeles no access factor is added, on the assumption that passengers will simply use their previous travel mode of airport access to reach train stations. In other markets, access distance per train trip of between five and 10 miles is assumed, depending on the size of the urban area. Overall, 75 percent of train riders are assumed to access stations by light vehicle. These conservative assumptions are used because no alternate source of such estimates was identified.

Powering High Speed Rail Trains: The literature indicates a wide range of electricity power consumption by high-speed rail. This model assumes the 0.04 kilowatt hours per seat kilometer (per seat kilometer) indicated for trains with top speeds of up to 186 miles per hour (300 kilometers per hour).⁵⁸ However, California's high-speed rail trains are planned to operate at a top speed of 220 miles per hour (354 kilometers per hour), a speed that has been approached only in China (350 kilometers per hour), which has since reduced operating speeds to a maximum of approximately 193 miles per hour (310

⁵⁶ This is consistent with the treatment in California High Speed Rail Authority, *Draft Environmental Impact Report/Statement: Fresno to Bakersfield*, Table 3.3-17, http://www.hsr.ca.gov/docs/programs/fresno-baker-eir/draft_EIR_FresBaker_Vol1_3_3.pdf.

⁵⁷ *SAS Advanced Emission Calculator*, <http://www.flysas.com/en/us/travel-info/other/co2-compensation/>

⁵⁸ Yuki Tanaka, Louis S. Thompson, Lee Schipper, Andrew Kosinski, and Elizabeth Deakin (2010), Analysis of High Speed Rail's Potential to Reduce CO₂ Emissions from Transportation in the United States, Paper presented to the World Conference on Transportation Research.

kilometers per hour). Research in China⁵⁹ indicates that 28 percent more in power is required to operate trains at such speeds compared to 186 miles per hour (300 kilometers per hour), which was formerly the highest speeds attained by high speed rail. It is assumed that the trains would reach 350 miles per hour on the genuine high speed rail right of way and no more than 120 miles per hour on the commuter rail right of way (and power requirements are assumed to be lower at 120 miles per hour, consistent with the relationship in the China research).

Consistent with CHSRA data, it is assumed that each train set would have 450 seats.

GHG Emissions from the Train: The trains will not directly produce GHG emissions, however the generation and transmission of electricity for the trains produces GHG emissions. It is assumed that high-speed rail trains will indirectly produce GHG emissions at the average generation and transmission loss mix of electricity consumed in California. According to the California Air Resources Board, California electricity generation and transmission losses produced 0.318 GHG tonnes per megawatt hour consumed in 2011.⁶⁰ This figure is adjusted downward to achieve the 33 percent renewable power standard implemented by CARB for 2020 and beyond.

Other High Speed Rail Functions: It is assumed that the GHG emissions from day to day functioning of high-speed rail stations, maintenance facilities and maintenance rail rights of way would be at the same relationship of GHG emissions from the trains (see *Propulsion Power* above), as is indicated in CHSRA documentation in the Fresno to Bakersfield corridor.⁶¹

Dynamic Forecasts

The "Dynamic Forecasts" adjust the Static Forecasts to replicate an underlying assumption that California will, in 2040, beyond the trajectory to achieve its 2050 GHG emissions reductions, particularly in the transportation sector.

Examples of adjustment to the methodology include:

Adoption of an additional 10 percent Low Carbon Fuel Standard.

Achievement of an 87 percent ZEV share of light vehicles.⁶²

Achievement of the Federal Aviation Administration "CLEEN" airline fuel efficiency standards.⁶³

⁵⁹ Zhang Xing chen, Feng Xuesong, Mac Baohua, Jia Shunping and Feng, Xujie (2011), *Simulation Research on the Traction Energy Consumption of High Speed Trains in China*, Journal of Transportation Systems Engineering and Information Technology.

⁶⁰ Calculated from data in California Air Resources Board (October 2, 2013), *California Greenhouse Gas Emissions for 2000 to 2011, – Trends of Emissions and Other Indicators*, http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_trends_00-11_2013-10-02.pdf

⁶¹ As indicated in California High Speed Rail Authority, *Draft Environmental Impact Report/Statement: Fresno to Bakersfield*, Table 3.3-17, http://www.hsr.ca.gov/docs/programs/fresno-baker-eir/draft_EIR_FresBaker_Vol1_3_3.pdf

⁶² California Air Resources Board, Public Hearing to Consider Advanced Clean Cars Program, <http://www.arb.ca.gov/board/books/2012/012612/12-1-2pres.pdf>.

⁶³ *United States Aviation Greenhouse Gas Emission Reduction Plan* (2012), https://www.faa.gov/about/office_org/headquarters_offices/apl/enviro_policy_guidance/policy/media/Aviation_Greenhouse_Gas_Emissions_Reduction_Plan.pdf

Costs under the Dynamic Forecasts are unchanged, principally because of uncertainties about the operating costs of light vehicles with alternative technologies in 2040.

Cost Impacts:

All costs are expressed in inflation adjusted 2013 dollars and apply to the year 2040.

Annual Capital Cost: Equivalent annual capital costs are developed for the low-cost option and the high cost option using a real interest rate of 3 percent is used over 50 years. There has been considerable variation in federal guidance on annualization rates for capital costs in recent years. As late as 2003, federal guidance recommended the use of real discount rates of 7 percent and 3 percent.⁶⁴ More recently, this has been reduced to 1.9 percent. The US Department of Transportation, Federal Transit Administration (FTA) requires a 2.0 percent rate.⁶⁵ Over the last 30 years, the average real US Treasury bond rate has been 3.3 percent.⁶⁶ It seems likely that the annualization rate will increase toward more historic rate as the Federal Reserve Board's quantitative easing policy is phased out. Virtually all of the high speed capital costs are to be incurred in future years, and an annualization rate of 3.0 percent seems appropriate.

A sensitivity analysis was performed to estimate the differences in cost per tonne of GHG emissions from high speed rail at varying annualization rates. At the FTA real annualization rate of 2.0 percent, the cost per GHG emission tonne reduction would be approximately \$800, compared to the \$1,000 at the 3.0 percent rate for the most favorable scenario in this report (Static Forecast: CHSRA Scenario). At the former OMB real annualization rate of 7.0 percent, the cost per GHG emission tonne reduction would be \$2,200. The use of shorter annualization periods would increase the annualized capital costs.

Annual Operating and Maintenance Cost: The annual operating cost is taken from the *Draft 2014 Business Plan*.

Airline Cost: The savings in airline cost per passenger is based on the passenger fare assumption in the *Draft 2014 Business Plan*.

Light vehicle Cost: The savings in light vehicle cost per vehicle mile is based on the per mile assumptions in the *Draft 2014 Business Plan*.

CHSRA Cost Analysis: CHSRA's GHG emissions reduction report does not include a cost analysis (from which a cost per tonne could be calculated). As a result, the independent cost analysis developed for the Adjusted CHSRA Scenario is used for the CHSRA Scenario.

Caveats

This report produces "dynamic forecasts" of GHG emissions reductions. Dynamic forecasting is generally not employed by public agencies and can be inconsistent with planning guidelines. However, the failure to employ dynamic forecasting --- as may be required by planning regulations and convention --- in

⁶⁴ US Office of Management and the Budget (September 3, 2003), *Circular A-4*, http://www.whitehouse.gov/sites/default/files/omb/assets/regulatory_matters_pdf/a-4.pdf.

⁶⁵ Federal Transit Administration, *New and Small Starts Rating and Evaluation Process Final Policy Guidance August 2013*, http://www.fta.dot.gov/documents/NS-SS_Final_PolicyGuidance_August_2013.pdf.

⁶⁶ Calculated from Office of Management and Budget (December 26, 2013), *Budget Assumptions*, <http://www.whitehouse.gov/sites/default/files/omb/assets/a94/dischist-2014.pdf>.

California's transformative GHG emissions reduction policy environment can render conventional static forecasting to be grossly inaccurate and of little relevance.

This report represents a provisional attempt to develop dynamic forecasts, although it is expected that public agencies, with their far greater resources could substantially improve both the methodology and accuracy. In developing the dynamic forecasts, this report has tended toward conservative assumptions that give the "benefit of the doubt" to high speed rail.

Moreover, the forecasts are at substantial variance with GHG emissions reduction cost metrics. Thus, improvements to the methodology would not be likely to result in differences material enough to alter the public policy conclusion that high speed rail is an exceedingly expensive, and only a temporary measure for reducing GHG emissions.

Further, because no credible assumption was identified the average vehicle occupancy of cars whose occupants travel instead by high speed rail, it was assumed that each car taken off the road had a single occupant, the driver. A more likely higher assumption (such as two passengers per light vehicle) would reduce the GHG emissions reduction per light vehicle and reduce the high speed rail advantage. Similarly, the attraction of a light vehicle passenger who is not the driver to high speed rail would not result in a reduction of GHG emissions by high speed rail. This 1.0 light vehicle occupancy assumption results in *higher* high speed rail GHG emissions reductions than are likely.

APPENDIX B: SUPPLEMENTAL TABLES

Table B-1			
High Speed Rail Greenhouse Gas Emission Impacts: 2040: Static Forecasts			
Dynamic Forecasts			
OPERATIONS & MAINTENANCE	CHSRA	Adjusted CHSRA	International Experience
Automobile Travel	Unknown	(0.35)	(0.18)
Airline Travel	unknown	(0.31)	(0.15)
Trains: Indirect Power	unknown	0.35	0.17
Stations, Facilities & Maintenance of Way	unknown	0.07	0.03
Total	unknown	(0.25)	(0.12)
Static Forecasts			
OPERATIONS & MAINTENANCE	CHSRA	Adjusted CHSRA	International Experience
Automobile Travel	Unknown	-0.56	-0.28
Airline Travel	unknown	-0.44	-0.22
Trains: Indirect Power	unknown	0.35	0.17
Stations, Facilities & Maintenance of Way	unknown	0.07	0.03
Total	-1.54	-0.59	-0.29
In millions of tons			
Construction GHGs not considered due to lack of data.			
Sources: CHSRA & authors calculations			

Table B-2			
High Speed Rail 2040 Costs			
In Billions of 2013\$	CHSRA	Adjusted CHSRA	International Experience
Capital: Equivalent Annual Cost: Low	unknown	\$2.13	\$2.13
Capital: Equivalent Annual Cost: High	unknown	\$2.49	\$2.49
Automobile Cost	unknown	(\$0.83)	(\$0.41)
AirlineCost	unknown	(\$0.40)	(\$0.20)
High Speed Rail Operations & Maintenance	unknown	\$0.87	\$0.43
Total with Low Capital Cost	\$1.57	\$1.78	\$1.96
Total with High Capital Cost	\$1.93	\$2.14	\$2.31
In millions of tons			
Sources: CHSRA & authors calculations			

Paper 2

**Legality of Use
of
Cap-and-Trade
Auction Proceeds
to Fund High-Speed Rail**

**Attorneys Scott B. Birkey and
James M. Purvis**

Cox, Castle, Nicholson

Memorandum**Attorney-Client Privileged****Confidential – Common Interest Privilege**

To: Michael J. Brady

From: Scott B. Birkey
James M. Purvis

Date: February 18, 2014

File No: 062043

Re: Legality of Use of Cap-and-Trade Auction Proceeds to Fund High-Speed Rail

In his 2014-15 budget, the Governor proposes to allocate \$250 million of cap-and-trade auction proceeds to the California High-Speed Rail Authority (the “Authority”). You asked us to consider whether the use of such proceeds to fund high-speed rail would be legal. In short, we believe that an appropriation of cap-and-trade auction proceeds to fund high-speed rail would be vulnerable in a legal challenge because high-speed rail construction will in and of itself not further the goals of AB 32 – that is, to reduce greenhouse gas (“GHG”) emissions statewide to 1990 levels by 2020 – and therefore such appropriation would constitute the use of auction proceeds for an unrelated revenue purpose, which is prohibited under *Sinclair Paint Company v. State Board of Equalization*, 15 Cal.4th 866 (Cal. 1997).

1. **Background on Cap-and-Trade in California**

The Global Warming Solutions Act of 2006 (Chapter 488, Statutes of 2006, codified at Health & Saf. Code, §§ 38500 et seq.), commonly referred to as AB 32, did two important things: (1) it established the goal of reducing GHG emissions statewide to 1990 levels by 2020, *see* Health and Saf. Code, § 38550; and (2) it authorized the California Air Resources Board (“CARB”) to adopt regulations creating “market-based compliance mechanisms” to achieve that goal, *see id.* §§ 38562, 38570. Pursuant to such authority, CARB then adopted regulations that established California’s GHG emissions cap-and-trade program. *See* 17 Cal. Code Regs., §§ 95800 et seq.

In short, CARB’s regulations place a “cap” on aggregate GHG emissions from entities responsible for roughly 85% of California’s emissions. To implement the cap-and-trade program, CARB allocated a certain number of carbon allowances equal to the cap. Each allowance equals one ton of carbon dioxide equivalent. Under the cap-and-trade program,

CARB provides some allowances for free, while making others available for purchase at auctions. Once the allowances have been allocated, entities may then “trade” (i.e., buy and sell on the open market) the allowances in order to obtain enough to cover their total emissions for a given period of time.

To date, CARB has conducted five separate auctions since November 2012.¹ Cumulatively, these auctions have resulted in a total of \$532 million in state revenue, and future quarterly auctions are expected to raise additional revenue. By law, auction proceeds are placed into a special fund in the State Treasury – the Greenhouse Gas Reduction Fund – from which they are available for appropriation by the Legislature. *See* Gov. Code, § 16428.8. From there, the monies must be used “to facilitate the achievement of reductions of greenhouse gas emissions in [California] consistent with” AB 32.² Health & Saf. Code, § 39712.

2. **The Governor’s 2014-15 Proposed Budget**

The Governor’s 2014-15 budget proposes to allocate \$250 million of cap-and-trade auction revenues to the Authority, including \$58.6 million for Phase I project planning as well as \$191.4 million for construction and right-of-way acquisition for the first phase of the Initial Operating Section. *See* GOVERNOR’S BUDGET 2014-15, PROPOSED BUDGET SUMMARY, *available at* <http://www.ebudget.ca.gov/2014-15/BudgetSummary/BSS/BSS.html>.

3. **Use of Cap-and-Trade Auction Proceeds to Fund High-Speed Rail Will Not Further the Purposes of AB 32 and Therefore Will be Vulnerable in a Legal Challenge.**

The constitutionality of CARB’s cap-and-trade program has been raised in two separate lawsuits, *California Chamber of Commerce v. California Air Resources Board* (Case No. 34-2012-80001313, Sacramento Superior Court) and *Morning Star Packing Co. v. California Air Resources Board* (Case No. 34-2013-80001464, Sacramento Superior Court), respectively. If found to be unconstitutional, the cap-and-trade program would be undone in its entirety.³ Even assuming that cap-and-trade is found to be constitutional, however, cap-and-trade auction proceeds nevertheless may not be appropriated by the legislature for unrelated revenue purposes. And because the construction of high-speed rail would not further the purposes of AB 32, any such appropriation would be subject to legal challenge.

¹ A sixth auction will be held on February 19, 2014. *See* CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY, AIR RESOURCES BOARD, AUCTION INFORMATION, <http://www.arb.ca.gov/cc/capandtrade/auction/auction.htm> (last visited February 8, 2014).

² In addition to the auction revenues, AB 32 and the implementing regulations authorize CARB to collect a fee to recover the administrative costs of carrying out AB 32. *See* Health & Saf. Code, § 38597; 17 Cal. Code Regs., §§ 95200 et seq. Such fees are intended to collect an amount of funds necessary to recover CARB’s costs of implementing and enforcing AB 32 each fiscal year.

³ In fall of 2013 the Sacramento Superior Court upheld the constitutionality of the cap-and-trade program, finding that such program did not constitute an unconstitutional tax. *See* Joint Ruling on Submitted Matters, Case No. 34-2012-80001313 (Aug. 28, 2013). This issue now is pending on appeal.

a. **Cap-and-trade auction proceeds must be used to advance the goals of AB 32.**

If ultimately deemed constitutional, cap-and-trade necessarily would be found to constitute any one of three valid fees recognized in the case law: (1) special assessments that are based on the value of a benefit conferred on property; (2) development fees exacted in return for permits and other privileges; or (3) regulatory fees imposed under the State's police power. *See Sinclair Paint v. State Bd. of Equalization*, 15 Cal. 4th 866, 874 (Cal. 1997). Although cap-and-trade does not fit clearly into any one of these three respective types of fees, it most likely would be characterized as a regulatory fee.

Broadly, regulatory fees are not dependent on government-conferred benefits or privilege and are imposed under the police power. *Id.* at 875. Courts have found such fees valid so long as: (1) fee revenues are spent for purposes related to the regulatory activities for which those fees were assessed; and (2) the amount of fees assessed and paid does not exceed the reasonable cost of providing the protective services for which the fees are charged. *See Cal. Farm Bureau Fed'n v. State Water Res. Control Bd.*, 51 Cal.4th 421, 437-42 (Cal. 2011); *Cal. Bldg. Indus. Ass'n v. San Joaquin Valley Air Pollution Control Dist.*, 178 Cal.App.4th 120, 131-32 (Cal. Ct. App. 2009); *Sinclair Paint*, 15 Cal.4th at 876-80.

Notably, California courts have recognized that regulatory fees legally may be imposed as part of a broader regulatory scheme for which the fee payer does not receive any perceived "benefit." *See Pennell v. City of San Jose*, 42 Cal.3d 365, 375 (Cal. 1986). In *Sinclair Paint*, for example, the Supreme Court noted that the State may impose industry-wide "remediation" or "mitigation" fees intended to defray the actual or anticipated adverse effects of an industry's business operations. *See Sinclair Paint*, 15 Cal.4th at 877-78. "From the viewpoint of general police power authority," the *Sinclair Paint* court continued, "we see no reason why statutes or ordinances calling on polluters or producers of contaminating products to help in mitigation or cleanup efforts should be deemed less 'regulatory' in nature than the initial permit or licensing programs that allowed them to operate." *Id.* at 877. But the *Sinclair Paint* court also noted that such "remediation" or "mitigation" fee measures at the least have required a "causal connection" or "clear nexus" between the product and its identified adverse effects. *Id.* at 878, 881.

Based on the foregoing analysis, cap-and-trade auction proceeds must be used for purposes related to the regulatory activities for which those fees were assessed. And in line with such requirement, Health and Safety Code section 39712 plainly requires that auction proceeds be used "to facilitate the achievement of reductions of greenhouse gas emissions in [California] consistent with" AB 32. Thus, in order for cap-and-trade auction proceeds validly to be appropriated to a state agency, any such appropriation must be used to further the purposes of AB 32.

b. Use of cap-and-trade auction proceeds to fund high-speed rail will not further the purposes of AB 32.

Given the legal requirements, the Governor's proposal to fund high-speed rail from cap-and-trade auction proceeds legally is untenable. The primary purpose of AB 32, and the only purpose which is related to construction and ultimate operation of the high-speed rail system, is to reduce California's greenhouse gas emissions to 1990 levels by 2020. And there simply is no support for the conclusion that high-speed rail will help achieve AB 32's purpose of reducing GHG emissions to such levels.

As an initial matter, according to the Authority's Revised 2012 Business Plan, high-speed rail will not be operational until 2022 at the earliest.⁴ And by its own admissions, the Authority itself has recognized that "construction activities will generate GHG emissions."⁵ See CALIFORNIA HIGH-SPEED RAIL AUTHORITY, CONTRIBUTION OF THE HIGH-SPEED RAIL PROGRAM TO REDUCING CALIFORNIA'S GREENHOUSE GAS EMISSION LEVELS 9, 13-15 (2013). That is, even under the Authority's best estimates, high-speed rail will not help to reduce GHG emissions by 2020. Thus, even assuming that high-speed rail might eventually reduce GHG emissions in the long term, it would not help to achieve AB 32's primary goal of reducing greenhouse gas emissions to 1990 levels by 2020. On this basis alone, the use of cap-and-trade auction proceeds to fund high-speed rail will be vulnerable in a legal challenge. And on this basis as well, the Legislature's budget analyst similarly has concluded that the use of auction proceeds to fund high-speed rail legally is risky. LEGISLATIVE ANALYST'S OFFICE, THE 2012-13 BUDGET: FUNDING REQUESTS FOR HIGH-SPEED RAIL 7-8 (2012) (attached hereto as **Exhibit A**); LEGISLATIVE ANALYST'S OFFICE, THE 2014-15 BUDGET: OVERVIEW OF THE GOVERNOR'S BUDGET 37-38 (2014) ("Specifically, we are advised that [use of auction proceed revenues] is

⁴ The Authority's Draft 2014 Business Plan, which was released on February 7, 2014, maintains that operation will not begin prior to 2022. See CALIFORNIA HIGH-SPEED RAIL AUTHORITY, DRAFT 2014 BUSINESS PLAN 16 (2014).

⁵ While the Authority explicitly recognizes that construction of the project will generate greenhouse gas emissions, it nonetheless contends that it is "committed to achieving zero net GHG emissions related to construction activities" by use of various offset strategies. CALIFORNIA HIGH-SPEED RAIL AUTHORITY, CONTRIBUTION OF THE HIGH-SPEED RAIL PROGRAM TO REDUCING CALIFORNIA'S GREENHOUSE GAS EMISSION LEVELS 13 (2013). Thus, if appropriated to the Authority, cap-and-trade auction proceeds ironically might be utilized by the Authority not to reduce greenhouse gas emissions but as a way to offset its own construction-related GHG emissions. But even assuming that the Authority correctly asserts that construction ultimately will result in zero net greenhouse gas emissions, such a result merely will maintain the status quo, that is, *it will not contribute to AB 32's goal of actually reducing emissions to 1990 levels by 2020.*

Alternatively, in the event that offsets are not employed, researchers have studied high-speed rail's "payback" period (the point at which the GHG emissions reductions from the substitution of auto and air trips for high-speed rail trips equals the GHG emissions produced by the high-speed rail project) and concluded that GHG payback likely would not occur until 20 to 30 years after groundbreaking. See MIKHAIL CHESTER & ARPAD HORVATH, HIGH-SPEED RAIL WITH EMERGING AUTOMOBILES AND AIRCRAFT CAN REDUCE ENVIRONMENTAL IMPACTS IN CALIFORNIA'S FUTURE 9 (2012). Chester and Horvath note, however, that "payback is highly sensitive to reduced automobile travel," any therefore any slip in ridership from currently predicted levels would delay the expected payback period even further. *Id.*

subject to the so-called Sinclair nexus test. . . . Given this legal requirement, the administration's proposal to fund activities (such as high-speed rail) could be legally risky.") (attached hereto as **Exhibit B**).

Further, multiple studies suggest that, even if in the long-term high-speed rail will result in GHG emissions reductions, such reductions will be substantially lower than the Authority projects. At least one commenter, for example, has concluded that methodological faults in the Authority's emissions reductions estimates led to a 130 to 190 percent overestimation of GHG emissions reductions. *See* JOEL SCHWARTZ, BLUE SKY CONSULTING GROUP, COMMENTS SUBMITTED TO THE CALIFORNIA HIGH SPEED RAIL AUTHORITY ON THE REVISED DRAFT ENVIRONMENTAL IMPACT REPORT/SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE FRESNO-BAKERSFIELD SEGMENT OF THE CALIFORNIA HIGH SPEED TRAIN PROJECT (Oct. 16, 2012). And others have concluded that the Authority's ridership estimates are flawed, and that such flaws cast doubt on the Authority's GHG emissions reduction estimates. *See, e.g.,* DAVID BROWNSTONE, MARK HANSEN & SAMER MADANAT, REVIEW OF "BAY AREA/CALIFORNIA HIGH-SPEED RAIL RIDERSHIP AND REVENUE FORECASTING STUDY" (June 2010).

The more attenuated the relationship between each dollar spent from cap-and-trade and the GHG emissions reduction achieved, the more likely a court would be to find that the use of cap-and-trade auction proceeds to fund high-speed rail would be for an "unrelated revenue purpose," rather than to advance the purposes of AB 32. *See Sinclair Paint*, 15 Cal.4th at 878.

4. **In Any Event, Use of Cap-and-Trade Auction Proceeds to Fund High-Speed Rail is a Poor Investment Strategy and Therefore Inconsistent with State's Stated Intention of Spending Such Proceeds Well.**

Finally, we note that a number of commentators have questioned the wisdom of using cap-and-trade auction proceeds to fund high-speed rail as a poor investment strategy. And although not a legal requirement, the current Cap-and-Trade Auction Proceeds Investment Plan reflects the State's intention to spend cap-and-trade auction proceeds well. *See* STATE OF CALIFORNIA, CAP-AND-TRADE AUCTION PROCEEDS INVESTMENT PLAN: FISCAL YEARS 2013-14 THROUGH 2015-15 (May 14, 2013) ("The investment of the cap-and-trade auction proceeds brings both the opportunity and the responsibility to spend them well and to further the objectives of AB 32.").

Certainly as compared to a different mix of investments that could be made with cap-and-trade revenue, the Governor's proposal is unlikely to maximize GHG emissions reductions. For instance, even assuming that the Authority's estimates for the less costly 2008 proposed system are accurate, achieving GHG emissions by building the high-speed rail system could cost many times the \$20 to \$50 per ton that that United Nations Intergovernmental Panel on Climate Change has concluded would achieve sufficient GHG emissions reductions. *See* WENDELL COX & JOSEPH VRANICH, THE CALIFORNIA HIGH SPEED RAIL PROPOSAL: A DUE DILIGENCE REPORT

(2008); *see also* Terry Barker et al., *Mitigation from a Cross-Sectoral Perspective*, in CONTRIBUTION OF WORKING GROUP III TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (2007). Under such standard, use of cap-and-trade auction proceeds to achieve greenhouse gas reductions would be extremely cost-ineffective, and would divert these important funds from other uses that would constitute far better investment strategies. This policy perspective could help color legal arguments made against the use of cap-and-trade auction proceeds for high-speed rail.

EXHIBIT 'A'

EXHIBIT 'A'

environmental review for various sections of the project.

In addition, the Governor's January budget proposal includes \$17.9 million for state operations to fund the authority for 73 positions (including 19 new positions), contracts with other state departments, and external contracts for communications, program management, and financial consulting services.

BUSINESS PLAN AND BUDGET PROPOSALS RAISE CONCERNS

Based on our review of the 2012 business plan and the Governor's related budget proposals, we find that the HSRA has not provided sufficient detail and justification to the Legislature regarding its plan to build a high-speed rail system. Specifically, we find that (1) most of the funding for the project remains highly speculative, including the possible use of cap-and-trade revenues; and (2) important details regarding the very recent, significant changes in the scope and delivery of the project have not been sorted out.

Most of the Future Funding Remains Speculative

Future Funds Not Identified. The future sources of funding to complete Phase 1 Blended are highly speculative. Specifically, the funding approach outlined in the 2012 revised business

plan is no more certain than what was proposed in previous plans. For example, the recent plan assumes nearly \$42 billion, or 62 percent of the total expected cost, will be funded by the federal government. However, about \$39 billion of this amount has not been secured from the federal government. Given the federal government's current financial situation and the current focus in Washington on reducing federal spending, it is uncertain if any further funding for the high-speed rail program will become available. In other words, it remains uncertain at this time whether or not the state will receive the necessary funds to complete the project. The absence of an identified funding source at the federal level makes the state's receipt of additional funding unlikely, particularly in the near term. In addition, it is unclear how much, if any, other non-state funds (such as local funds, and funds from operations and development, or private capital) have been secured. In total, only \$11.5 billion (or about 17 percent) of the estimated funds needed to complete the project have been committed.

Use of Cap-and-Trade Auction Revenues Very Speculative. As discussed earlier, the plan proposes to use revenue from the state's quarterly cap-and-trade auctions, which are scheduled to begin in November of this year, to backstop any shortfall in anticipated funding from the federal government. These auctions involve the selling of carbon allowances as a way to regulate and limit the state's GHG

Figure 4

Central Valley Segment Divided Into Five Design-Build Contracts

Contract	Description	Length in Miles ^a	Cost Estimate (In Billions)	Estimated Date of Contract Award
1	North of Fresno through Fresno	26 to 37	\$1.5	December 2012
2	South Fresno to Hanford Aroma Road	28	0.8	September 2013
3	Hanford Aroma Road to Dresser Avenue	55	1.0	September 2013
4	Dresser Avenue to Allen Road	14	0.4	October 2013
5	Trackwork for the entire 130 mile segment	N/A	0.5	March 2017

^a Length of construction segments are approximate.

emissions in accordance with Chapter 488, Statutes of 2006 (AB 32, Núñez/Pavley). As we discussed in our recent brief, *The 2012-13 Budget: Cap-and-Trade Auction Revenues*, the use of cap-and-trade revenues are subject to legal constraints. Based on an opinion we received from Legislative Counsel, the revenues generated from the cap-and-trade auctions would constitute “mitigation fee” revenues. Therefore, in order for their use to be valid as mitigation fees, these revenues must be used to mitigate GHG emissions. Given these considerations, the administration’s proposal to possibly use cap-and-trade auction revenues for the construction of high-speed rail raises three primary concerns.

- ***Would Not Help Achieve AB 32’s Primary Goal.*** The primary goal of AB 32 is to reduce California’s GHG emissions statewide to 1990 levels by 2020. Under the revised draft business plan, the IOS would not be completed until 2021 and Phase 1 Blended would not be completed until 2028. Thus, while the high-speed rail project could eventually help reduce GHG emissions somewhat in the very long run, given the project’s timeline, it would not help achieve AB 32’s primary goal of reducing GHG emissions by 2020. As a result, there could be serious legal concerns regarding this potential use of cap-and-trade revenues. It would be important for the Legislature to seek the advice of Legislative Counsel and consider any potential legal risks.
- ***High-Speed Rail Would Initially Increase GHG Emissions for Many Years.*** As mentioned above, in order to be a valid use of cap-and-trade revenues, programs will need to reduce GHG emissions. While the HSRA has not conducted an analysis to

determine the impact that the high-speed rail system will have on GHG emissions in the state, an independent study found that—if the high-speed rail system met its ridership targets and renewable electricity commitments—construction and operation of the system would emit more GHG emissions than it would reduce for approximately the first 30 years. While high-speed rail could reduce GHG emissions in the very long run, given the previously mentioned legal constraints, the fact that it would initially be a net emitter of GHG emissions could raise legal risks.

- ***Other GHG Reduction Strategies Likely to Be More Cost Effective.*** As we discussed in our recent brief on cap-and-trade, in allocating auction revenues we recommend that the Legislature prioritize GHG mitigation programs that have the greatest potential return on investment in terms of emission reductions per dollar invested. Considering the cost of a high-speed rail system relative to other GHG reduction strategies (such as green building codes and energy efficiency standards), a thorough cost-benefit analysis of all possible strategies is likely to reveal that the state has a number of other more cost-effective options. In other words, rather than allocate billions of dollars in cap-and-trade auctions revenues for the construction of a new transportation system that would not reduce GHG emissions for many years, the state could make targeted investments in programs that are actually designed to reduce GHG emissions and would do so at a much faster rate and at a significantly lower cost.

EXHIBIT 'B'

EXHIBIT 'B'

Jail Construction

Governor Proposes an Additional \$500 Million for Jail Construction. Since 2007, the Legislature has approved two measures authorizing a total of \$1.7 billion in lease-revenue bonds to fund the construction and modification of county jails. Chapter 7, Statutes of 2007 (AB 900, Solorio), provided \$1.2 billion to help counties address jail overcrowding. Chapter 42, Statutes of 2012 (SB 1022, Committee on Budget and Fiscal Review), authorized an additional \$500 million to help counties construct and modify jails to accommodate longer-term inmates who have been shifted to county responsibility under the 2011 realignment of lower-level offenders. The Governor's budget for 2014-15 proposes that another \$500 million in lease-revenue bonds be authorized to support the construction of jail facilities. Under the proposal, counties would be subject to a 10 percent match requirement.

LAO Comments. The administration has not yet provided an analysis of county jail needs or other rationale for why the level of funding proposed is needed for jail projects or what criteria would be used to award the lease-revenue funding. For example, it is not clear whether funding would be awarded in a manner to alleviate crowding or to build additional facility space for programs, such as substance abuse treatment classes. Without such information, it will be difficult for the Legislature to assess whether the additional funding will be allocated in a manner that is cost effective and in line with state priorities.

Resources and Environmental Protection

Cap-and-Trade Expenditure Plan

Background. The Global Warming Solutions Act of 2006 (Chapter 488, Statutes of 2006 [AB 32, Núñez/Pavley]), commonly referred to as AB 32,

established the goal of reducing GHG emissions statewide to 1990 levels by 2020. In order to help achieve this goal, the California Air Resources Board (ARB) adopted a regulation that establishes a cap-and-trade program that places a "cap" on aggregate GHG emissions from entities responsible for roughly 85 percent of the state's GHG emissions. To implement the cap-and-trade program, ARB allocates a certain number of carbon allowances equal to the cap. Each allowance equals one ton of carbon dioxide equivalent. The ARB provides some allowances for free, while making others available for purchase at auctions. Once the allowances have been allocated, entities can then "trade" (buy and sell on the open market) the allowances in order to obtain enough to cover their total emissions for a given period of time.

To date, ARB has conducted five auctions since November of 2012, which have generated a total of \$532 million in state revenue. Future quarterly auctions are expected to raise additional revenue. The *2013-14 Budget Act* authorizes the Director of Finance to loan \$500 million in cap-and-trade auction revenue to the General Fund.

Governor's Proposal. The Governor's budget proposes to spend \$850 million from cap-and-trade auction revenue in 2014-15 on various activities such as energy efficiency projects, low-emission vehicle rebates, and the state's high-speed rail project. Figure 14 (see next page) provides a list of the proposed programs and funding levels. The Governor's budget also includes a partial repayment of \$100 million of the 2013-14 budget loan to the General Fund.

Proposal Unlikely to Maximize GHG Emission Reductions. In order to minimize the economic impact of cap-and-trade, it is important that auction revenues be invested in a way that maximizes GHG emission reductions. Maximizing emission reductions (specifically in the capped sectors) reduces competition for allowances,

thereby putting downward pressure on the price of allowances. This, in turn, reduces the overall cost for covered entities to comply with AB 32 and the potential negative economic impacts of the program on consumers, businesses, and ratepayers. It is, however, unclear to what extent the complement of activities proposed by the Governor maximizes GHG emission reductions. For example, a GHG emission analysis completed by the High Speed Rail Authority (HSRA) indicates that once the high-speed rail system is operational in 2022, it would contribute a relatively minor amount of GHG emission reductions to the state. Moreover, the construction of the project would actually produce additional emissions (though HSRA will try to offset these emissions). Despite these findings, roughly 30 percent of the funding in the Governor's proposal goes to the high-speed rail project. Compared to a different mix of investments that could be made with the cap-and-trade revenue, the Governor's proposal is unlikely to maximize GHG emission reductions. Therefore, the Legislature will need to consider the most effective use of the cap-and-trade auction revenue.

Certain Aspects of Proposal Could Be Legally Risky. The Legislature will also want to consider

the potential legal risks associated with some of the activities that the Governor proposes to fund with cap-and-trade auction revenue. Based on an opinion that we received from Legislative Counsel, the revenues generated from ARB's cap-and-trade auctions are considered "mitigation fee" revenues. Thus, the use of these revenues are subject to certain legal criteria. Specifically, we are advised that their use is subject to the so-called Sinclair nexus test. This test requires that a clear nexus must exist between an activity for which a mitigation fee is used and the adverse effects related to the activity on which that fee is levied. Given this legal requirement, the administration's proposal to fund activities (such as high-speed rail) could be legally risky. While the high-speed rail project could eventually help reduce GHG emissions somewhat in the very long run, it would not help achieve AB 32's primary goal of reducing GHG emissions by 2020.

Water Action Plan

Proposal. In October 2013, the administration released a draft Water Action Plan that intends to address multiple water challenges facing the state, including limited and uncertain water supplies,

Figure 14

Governor's 2014-15 Cap-and-Trade Expenditure Plan

(In Millions)

Department	Activity	Amount
High-Speed Rail Authority	Rail planning, land acquisition, and construction	\$250
Air Resources Board	Low-emission vehicle rebates	200
Strategic Growth Council	Transit oriented development grants	100
Community Services and Development	Low-Income Home Energy Assistance Program	80
Caltrans	Intercity rail grants	50
Forestry and Fire Protection	Fire prevention and urban forestry	50
Fish and Wildlife	Water Action Plan—wetlands restoration	30
CalRecycle	Waste diversion	30
General Services	Energy efficiency upgrades in state buildings	20
Food and Agriculture	Reducing agricultural waste	20
Water Resources	Water Action Plan—water use efficiency	20
Total		\$850

Paper 3

Analysis of the CHSRA's GHG Report

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Analysis of the CHSRA's GHG Report

On July 1, 2013, the California High-Speed Rail Authority released its *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels* (June 2013).¹ It is meant to fulfill the mandate contained in SB 1029 (the Legislature's authorization of HSR bonds for the Central Valley project) to provide "a report on the 'net impact of the high-speed rail program on the state's greenhouse gas emissions.'"² However, the report fails to quantify the project's emissions and emissions reductions, thereby making an evaluation of the program's net impact impossible.

The report is obviously intended to counter the Legislative Analyst's budget report³ of April 2012, which concluded that the HSR project would result in a net increase in GHG emissions for the first 30 years of operations. Knocking down that report would open the door to funding HSR with cap and trade revenues. Interestingly, the CHSRA report never mentioned the LAO report and pretended it didn't exist. Someone must have concluded they couldn't win an argument on the merits.

Rather than dispute the LAO report, the CHSRA report claims to "detail[] the projected net greenhouse gas (GHG) emissions associated with the construction and operation of the high-speed rail system."⁴ However, the report offers no details of those emissions. If numbers were developed during the preparation of the report, they weren't included in the publication. This is a politicized promotional piece and not a science-based document. It is simply not credible and not responsive to the legislative mandate.

Update: The Governor's Budget Proposal

The Governor proposed that \$250 million in 2014-15 cap and trade revenues go to HSRA. He further requested that 33% of all cap and trade revenues starting with 2015-16 be continuously appropriated to HSRA.⁵ These many billions of dollars, if not well-spent by the HSR project, could threaten the effectiveness of the entire cap and trade program. Careful scrutiny of the HSR project's net GHG benefits is warranted.

Methodology

A disclosure on p. 17 invalidates the entire report: "The timeframe and activities analyzed and discussed in this report were for CP1 [the first phase of the current Merced-Bakersfield project]. As the project moves forward, direct GHG emissions calculations will be carried out for each subsequent construction package." The construction impacts of CP1 cannot be meaningfully analyzed in relation to the operational emissions

reductions calculations, because the latter pertains to the Initial Operating Section (IOS), which is ten times its length. No HSR operations are planned for CP1.

This is critical, because the report is actually comparing the emissions benefits of the IOS to the emissions costs of the one-tenth-as-long CP1. Completing the IOS would require funding the \$26 billion extension to the LA Basin, as well as building CP2, CP3, CP4 and CP5 [the remainder of the Merced-Bakersfield project]. Obviously, the net project emissions are going to be very different when the emissions arising from \$26+ billion of construction are added in.

Evaluating the HSR program's net impacts requires either the operational emissions reductions of CP1 or the construction emissions of the IOS. This report offers neither.

Summary of Findings

The following six so-called Findings are mere restatements of vague intentions, with no identified funding to implement them:

- Commitment to 100% renewable energy during operations
- Zero net greenhouse gas emissions during construction
- Supportive transit and land use for greater cumulative benefits for the state
- Plans to plant thousands of new trees across the Central Valley
- Cleaner school buses and water pumps in Central Valley communities
- Agricultural conservation measures aimed at reducing Central Valley sprawl and preserving valuable agricultural land⁶

In addition, the report offers no evidence in support of the following two so-called Findings:

- Zero net greenhouse gas emissions during construction⁷

There is no evidence to support this claim. No numbers whatsoever are offered for GHG mitigation activities. This is a classic "aspirational goal" rather than a finding on a plan to achieve one.

- Significant contributions to the State's goals embodied in AB 32 and SB 375⁸

There is no evidence to support this claim.

Not only is there no evidence to support the following three so-called Findings, they are actively misleading, as they are entirely dependent on CHSRA receiving an additional \$26 billion to build out the IOS to the Los Angeles Basin. In addition, they will mislead non-technical readers because they appear to be findings on the project's net emissions impacts. Because they exclude the construction emissions of both CP1 and the IOS, they represent only one side of the emissions ledger.

- Greenhouse gas savings from the first year of operations increasing to over 1 million tons of CO2 per year within 10 years⁹
- Result in net GHG emissions diversions that, conservatively, are the equivalent of the GHG emissions created from the electricity used in 22,440 houses, or removing 31,000 passenger vehicles from the road.¹⁰

- Using methodologies consistent with state practice, an estimated 4 to 8 million metric tons of CO₂ saved by 2030, as if the state turned off a coal fired power plant¹¹

As discussed below, this last assertion is also misleading because the 8 years of operations are being compared to roughly one year of such a power plant's emissions.

GHG Emissions Sources for High-Speed Rail System

The diagram on page 9 is the only rendition of emissions category totals in the report. Amazingly, there is no corresponding table. The diagram comes closer to identifying the net impact than anything else in the report. However, its use of graphic symbols instead of conventional chart bars makes it impossible to interpret quantitatively. It is unclear from the diagram (or its associated text) whether the symbols have any quantitative significance, and if they do, whether emissions totals are represented by the height or by the area of the symbols. This makes the diagram both useless and deceptive: it obscures more than it discloses. Given the central importance of this data, choosing this indecipherable diagram for its portrayal can only be interpreted as an act of bad faith.

Operational Emissions Reductions

This project has had a long history of challenges to the technical validity of the HSR ridership model and litigation about the hidden changes that were made to it that advantaged Pacheco ridership while penalizing Altamont ridership. Ridership is the key input to an analysis of operational emissions reductions. As will be discussed later, the GHG reduction benefits of the HSR project are very dependent on ridership. With the controversy surrounding the ridership projections, this net emissions analysis rests on a shaky foundation.

The most striking part of this section is the meaningless apples-and-oranges comparison between the annual emissions of a coal-fired power plant and the emissions reductions from 8 years of HSR operations.¹² This is an attempt to invite positive identification with HSR by creating a "Coal Bad--HSR Good" dualism, a classic technique of promotion.

Construction Emissions

While the report uses standard methods to calculate the direct emissions resulting from construction, it entirely leaves out the emissions resulting from the acquisition of construction materials, and offers a weak justification that these emissions shouldn't be counted against the project:

Regarding the construction materials, for some it is possible to calculate the impacts over the material's life-cycle, from extraction through processing, use onsite, and disposal, and express those impacts in GHG emissions terms. Those GHG emissions are usually the reporting responsibility of the manufacturer, and in terms of a project GHG emissions

inventory, happen "upstream" and outside the boundary of the project.

For example, cement manufacturers in California are subject to ARB's Mandatory Reporting and Cap-and-Trade Regulations. These regulations require cement manufacturers to report their GHG emissions annually to ARB. The emissions from cement manufacturing count towards the statewide GHG emissions "cap." The GHG emissions covered under the "cap" are required to be reduced through emission controls or a limited amount (eight percent) may be offset through the purchase of ARB certified offset credits.¹³

The problem is that these emissions from construction materials constitute a very significant part of the project's overall emissions, because of the huge amount of concrete called for in the plans. This amount is large enough to increase the cement manufacturing sector's statewide emissions, which makes the "count it upstream" approach entirely inappropriate when evaluating the project's net impacts.

Perhaps recognizing this, the next paragraph of the report acknowledges the appropriateness of including the emissions from construction materials in its analysis, yet withholds the data on the flimsy excuse that the data is not "precise" enough:

However, the Authority considers it important to disclose the GHG emissions that occur outside of the project associated with materials used during construction. **These have not yet been quantified, due to the limitations of available information at this stage of project delivery.** While it is understood that the rail infrastructure will consist, largely of aggregate, concrete, steel, rails, and ballast; the **precise** source and supplier of those materials is not yet known. Additionally, the **precise** quantities are not available, given the nature of the design-build procurement process... (emphasis added)¹⁴

This is a masterful exercise in appearing to be fair-minded while simultaneously holding back damaging information. It is obvious that in the course of putting the project out to bid, the Authority prepared estimates of construction material quantities. These estimates were the basis for the calculation of the direct construction emissions. The materials' emissions must be **huge** for the Authority to need to bury them with this kind of double-talk.

The Legislative Analyst's April 2012 report¹⁵ relied on a 2010 pioneering study by Chester and Horvath entitled *Life-cycle assessment of high-speed rail: the case of California*.¹⁶ The study's 2012 update produced data that enabled this calculation: Infrastructure construction and operations contribute between 40% and 51% of the

CHSRA project's GHG emissions per person per kilometer travelled. This figure rises to near 100% of the emissions for the scenario with 100% renewable power, and falls to 32% when the train's capacity is nearly doubled.¹⁷ The paper found "CAHSR infrastructure construction effects are dominated by concrete use. Approximately 67% of CAHSR infrastructure emissions are the result of cement production for concrete use..."¹⁸

This is the smoking gun: Construction materials (as well as infrastructure construction, if one doesn't assume the success of the zero net GHG emissions program¹⁹) make up a highly significant percentage of the project's overall GHG emissions. Leaving them out so compromises the net impact analysis as to render it worthless.

The Chester and Horvath study calculated the project's payback period, the point at which the emissions reductions from the substitution of auto and air trips (measured as Vehicle Kilometers Traveled, or VKT) with HSR trips equals the HSR project's GHG emissions, including its cumulative prior emissions:

The payback sensitivity reveals several important considerations for transportation planners and air quality policy makers. The cumulative plum-colored lines for the high, medium and low forecast figures show that the **GHG payback will likely occur between 20 and 30 yr (D3) after groundbreaking**, and acidification potential after 20–40 yr. **However, payback is highly sensitive to reduced automobile travel.** The 5.8 billion auto VKT displaced dominate emissions changes in the corridor and the effects from reduced air travel and CAHSR are small. The reduced auto impacts are significantly affected or dominated by life-cycle components, in particular, avoided vehicle manufacturing, vehicle maintenance and gasoline production. (emphasis added.)²⁰

Chester and Horvath are thus warning that any slip in ridership from currently predicted levels would delay the GHG benefits of HSR even further.

Double Counting

When evaluating statewide benefits, it is important that GHG emissions reductions calculations represent only the project's own properties. The model that was used, on the other hand, "also reflects the GHG emissions benefits of ARB's recent rulemakings including on-road diesel fleet rules, Pavley Clean Car Standards, and the Low Carbon Fuel standard."²¹ This means that the report's emissions reduction calculations overstate the benefits accruing to the HSR project.

Offset Activities

The only way the CHSRA's GHG Report is able to claim a net beneficial GHG impact is by buying offsets in the form of environmental mitigations, including construction mitigations,²² and farmland protection.²³ The strategy of the Cap and Trade program is

to purchase GHG-reducing offsets at the lowest cost per ton. There's something very odd about committing Cap and Trade funds to a project that increases GHGs, which then has to buy GHG-reducing offsets. It would be dramatically less expensive on a per-ton basis to fund the GHG-reducing projects directly. Buying these same offsets as part of a CHSRA project package is inherently far more expensive.

Conclusion

The report offers no numbers capable of serving as a basis for the conclusion that "the high-speed rail program will have a positive impact on reducing the state's greenhouse gas emissions."²⁴ Instead, that conclusion "'feels right' without regard to evidence, logic, intellectual examination, or facts"--the Wikipedia definition of Stephen Colbert's 'truthiness'.

Endorsements

The uncritical endorsements of the report by agency heads expose the depth of its politicization. It simply is not credible that sophisticated agency heads and their staffs failed to spot the profound flaws identified above. Brian Kelly, now Secretary of the State Transportation Agency, "reviewed and approve[s]" the report.²⁵ Mary Nichols, Chair of the Air Resources Board, "believe[s] the analysis is reasonable..."²⁶ Instead of the comprehensive overview expected of someone of her subject matter expertise, she offered only superficial comments on the emissions reductions from mobility choices, and avoided construction emissions and offsets entirely. These two endorsements make it obvious that the Governor ordered his people to "make HSR funding happen" no matter what.

¹ hsr.ca.gov/docs/programs/green_practices/HSR_Reducing_CA_GHG_Emissions_2013.pdf

² p. 13. (Unless otherwise noted, all references are to the report accessible at the URL above.)

³ Legislative Analyst's Office, *Funding Requests for High-Speed Rail*, April 17, 2012, p. 8

⁴ p. 13.

⁵ Legislative Analyst's Office, *Cap-and-Trade Auction Revenue Expenditure Plan*, February 2014, p. 5

⁶ p. 6.

⁷ *Id.*

⁸ *Id.*

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.*

¹² p. 11.

¹³ p. 14.

¹⁴ p. 14.

¹⁵ Legislative Analyst's Office, p. 8

¹⁶ Mikhail Chester and Arpad Horvath, *Life-cycle assessment of high-speed rail: the case of California*, Environmental Research Letters, January 2010.

¹⁷ Mikhail Chester and Arpad Horvath, *High-speed rail with emerging automobiles and aircraft can reduce environmental impacts in California's future*, Environmental Research Letters, July 2012, p. 5 [Interpolated from the chart data in Figure 1]

¹⁸ Chester and Horvath, 2012, p. 4.

¹⁹ pp. 13-15.

²⁰ Chester and Horvath, 2012, p. 9.

²¹ p. 19.

²² p. 13.

²³ p. 15.

²⁴ p. 20.

²⁵ p. 1.

²⁶ p. 5.

Paper 4

The History and Status Of The California High- Speed Rail Authority's Unlawful Funding Plan

Mark Powell

The History and Status of the California High-Speed Rail Authority's Unlawful Funding Plan

Prepared By: by Mark Robert Powell – March 2014

The History and Status of the California High-Speed Rail Authority's Unlawful Funding Plan

Summary:

This report, broken into five parts, traces the development of a funding plan for California's high-speed rail system from the inception of the Intercity High-Speed Rail Commission twenty-one years ago to the recent release of the California High-Speed Rail Authority's Draft 2014 Business Plan.

Part I briefly covers the development of California's former freeway plan, the statutorily required model for the development of a statewide high-speed rail network by 2020 and the means to fund its construction.

Part II details the Commission's, and later the Authority's, efforts to develop the required funding plan leading up to the Authority's 1999 decision to ignore the Commission's recommendation to secure a "base funding source" and instead pursue a "phased funding plan" that turned out to be no funding plan at all.

Part III gives the history of the delays in developing even a "phased funding" plan leading to both Governor Schwarzenegger's 2008 call for new legislation requiring a funding plan to assure that any state expenditures for the project would result in operational high-speed rail services and the legislation that ensued.

Part IV chronicles the escalating cost of the project and the Authority's attempts to circumvent the law requiring a funding plan, including attempts to scale down the project and make up for their funding shortfall with the promise of Cap and Trade funds.

Part V discusses the 2005 Statewide High-Speed Rail Program EIR/EIS that looked out to the year 2020 weighing the environmental impacts and benefits of a completed statewide high-speed rail network against a "No Project Alternative" and a "Modal Alternative" (increased funding for roads and airports) and found in favor of high-speed rail. With the Authority's own plans now silent on the date for completing the statewide system because it has no funds, with not even the smallest useable segment of high-speed rail scheduled for completion until well after 2020, and given that the funding plan for even that small segment has been found deficient by a Superior Court Judge, the paper suggest it may be time to halt the project entirely and conduct a new Statewide Program EIR/EIS reflecting the realities of 2014.

Notes Regarding the Format of this Paper:

Footnotes only cite links to on-line documents the first time the document is cited.

Previously cited footnotes are shown in brackets. For example [FN81] denotes previously cited footnote 81.

Italics are used for document titles and for quoted wording from California statutes.

About the Author:

Mark Robert Powell earned a Bachelor of Science in Chemical Engineering with Distinction from the University of Minnesota, class of 1976. Mark worked briefly in the computer industry programing and interfacing mini-computers to control complex chemical processes before moving to California to work for the Union Oil Company (Unocal) in their Chemical Division. Mark eventually became responsible for all of Unocal's chemical plants and shipping terminals in California, Oregon, and Washington overseeing the activities of 300 employees and an annual budget of \$100 million before taking a position as Manager of Strategic Planning. He chose to leave Unocal during a period of downsizing prior to the company's acquisition by Chevron Corporation to pursue a career teaching chemistry and physics. Most of his teaching career was spent teaching Advanced Placement and International Baccalaureate Physics students at a private high school in Orange County. In retirement Mark began to study and write about the failings of California's high-speed rail project on his blog, Against California High Speed Rail, eventually leading to his research work for attorneys litigating the Case of John Tos, Aaron Fukuda, and the County of Kings versus California High-Speed Rail Authority, et al.

Part I

The Authority's Mandate - A Plan Similar to California's Former Freeway Plan

The California High Speed Rail Authority ("Authority") was chartered in 1996¹. Like its predecessor, the Intercity High Speed Rail Commission ("Commission") chartered in 1993², it was tasked with "*preparation of a high-speed intercity rail plan similar to California's former freeway plan and designate an entity with stable and predictable funding sources to implement the plan.*" This mandate is still found in the California Public Utilities Code.³ A review of "California's former freeway plan" is worthwhile because the rail and freeway plans were to be "*similar*".

California's Former Freeway Plan

In 1957, shortly after the passage in 1956 of the Federal-Aid Highway Act (establishing a federal excise tax on motor fuels to help fund the Interstate Highway System), California Senate Concurrent Resolution (SRC) No. 26 – *Relative to an over-all state-wide plan of freeways and expressways for the State of California* was approved and filed with the Secretary of State on January 25, 1957. SCR 26 foresaw a need for "*the establishment of a plan for such a state-wide system of freeways and expressways*" so that "*fiscal arrangements may be worked out and properly coordinated*".⁴ The Department of Public Works was to issue the plan.⁵ The plan, entitled *The California Freeway System*, was issued on September 2, 1958 laying out 12,250 miles of freeways to be completed by 1980.⁶ The roughly 20-year plan incorporated 2100 miles of freeways, built to Interstate Highway standards, as part of the Federal-Aid Highway Act of 1956.⁷

The "planning year" 1980 was chosen because "reasonable estimates of population, land use, and vehicular travel could be projected only so far into the future".⁸ The Department of Public Works concluded their report by stating that the system outlined "is economically feasible and can be accomplished within the framework of present highway user finances within a reasonable period of years."⁹ The *California Freeway and Expressway System Act*, codifying the

¹ Senate Bill 1420 (Kopp), Approved by Governor on September 22, 1996 and filed with Secretary of State September 24, 1996, Section 185010(h). See http://www.leginfo.ca.gov/pub/95-96/bill/sen/sb_1401-1450/sb_1420_bill_960924_chaptered.pdf

² Senate Concurrent Resolution 6 (Kopp), Filed with Secretary of State July 20, 1993, Whereas section, paragraph 8. See http://www.leginfo.ca.gov/pub/93-94/bill/sen/sb_0001-0050/scr_6_bill_930720_chaptered

³ . California Public Utilities Code, Division 19.5, Chapter 1, Section 185010(h). See <http://www.leginfo.ca.gov/cgi-bin/displaycode?section=puc&group=184001-185000&file=185000-185012>

⁴ Senate Concurrent Resolution No. 26, Filed with Secretary of State January 25, 1957. Whereas Section, paragraph (e)

⁵ Senate Concurrent Resolution No. 26, Filed with Secretary of State January 25, 1957. Resolved Section, paragraph (a)

⁶ The California Freeway System, published September 2, 1958, page 25, The Freeway System, paragraph 1, Document available at UC Irvine Langson Library, Irvine CA

⁷ The California Freeway System, published September 2, 1958, page 5, Introduction, paragraph 6

⁸ The California Freeway System, published September 2, 1958, page 18, Study Methods and System Criteria, subsection Planning Period, paragraph 1

⁹ The California Freeway System, published September 2, 1958, page 32, Conclusion

recommendations of the Department of Public Works, was enacted by Legislature and signed by Governor Pat Brown on June 19, 1959.¹⁰

Each year Annual Reports by the Division of Highways, Department of Public Works, discussed the funding plan; informing the public of progress being made to implement the plan and the sources and distribution of the public's funds. Quoting from the December 1962 Annual Report:¹¹

“Highway Financing

Sound programing depends upon sound financing.

With a known number of registered vehicles, it is fairly easy to predict revenues from taxable gasoline and diesel fuel consumption, drivers' licensing and registration fees, weight fees on commercial vehicles, and taxes on for-hire trucking.

The State Constitution requires that all such highway-user funds be spent for road construction and maintenance and for the administration of the Division of Highways, Department of Motor Vehicles, and Highway Patrol. They may not be diverted for other purposes.

The largest source of funds is the six-cents-per-gallon state gasoline tax. Four cents are spent on the construction and maintenance of state highways, 1 3/8 cents on county roads and 5/8 cent on city streets.

The cities' share is distributed by the Division of Highways on a population basis, and the counties' share is distributed directly to the counties by the State Controller.

Approximately one-third of these street, road, and highway funds represent moneys returned to the State from taxes imposed on the highway user by the federal government. This money is spent on the interstate routes (matched 9 percent by state funds) and on the federal-aid primary, secondary, and urban highways (matched 42 percent by the State from user taxes).”

The Annual Reports also reported budgeted total sources and distributions in percent by source and in total dollars. The following table is combined for comparative purposes from the December 1961 and 1962 Annual Reports.

¹⁰ Statutes of California - 1958-1959, Chapter 1062.

¹¹ 16th Annual Report of the Division of Highways, Department of Public Works, December 4, 1962, page 9, Highway Financing, paragraphs 1-6.

Highway User Taxes Including Federal Aid

Source	FY 1962-1963¹²	FY 1963-1964¹³
Gas Tax	43%	42%
Motor Vehicle Fees	18%	18%
Use Fuel Tax (Diesel)	3%	3%
Transportation Tax	2%	2%
Federal Aid – Interstate (9% state match)	27%	28%
Federal Aid – Regular (42% state match)	7%	7%
Total Percent	100%	100%
 Total Dollars	 \$658,370,017¹⁴	 \$695,927,042¹⁵

It is clear that California’s freeway plan did have “*stable and predictable funding sources to implement the plan.*” The California High-Speed Rail Authority, because of missed opportunities and what might be called “wishful thinking”, never developed its required funding plan.

¹² 15th Annual Report of the Division of Highways, Department of Public Works, December 7, 1961, page 8, Table of Sources and Distributions. Document available at UC Irvine, Langson Library, Irvine CA.

¹³ 16th Annual Report of the Division of Highways, Department of Public Works, December 4, 1962, page 10, Table of Sources and Distributions. Document available at UC Irvine, Langson Library, Irvine CA.

¹⁴ 15th Annual Report of the Division of Highways, Department of Public Works, December 7, 1961, page 10, Highway Financing. Document available at UC Irvine, Langson Library, Irvine CA.

¹⁵ 16th Annual Report of the Division of Highways, Department of Public Works, December 4, 1962, page 9, Highway Financing. Document available at UC Irvine, Langson Library, Irvine CA.

Part II

Early Attempts at a Realistic High-Speed Rail Funding Plan

Twenty-one years ago Senate Concurrent Resolution 6 (Kopp) spurred the creation of the Intercity High-Speed Rail Commission when adopted by both the Assembly and Senate, and filed with the Secretary of State on July 20, 1993. It cited the need for “*the preparation of a 20-year high-speed intercity rail plan similar to California’s former freeway plan*” and “*an entity with stable and predictable funding sources to implement the plan*”.¹⁶ The California Legislature asked the Commission to prepare a financing plan that would include, but not be limited to, private funds, state general obligation bonds, revenue bonds backed by incremental increases in the gasoline tax, airport funds, and potential alternative public funding sources.¹⁷

Progress Made by the Intercity High-Speed Rail Commission – 1993 to 1996

The nine members of the Commission with backgrounds in construction, finance, banking, law, engineering, railroads, and some experience in the public sector¹⁸ completed five technical studies and a Public Participation Program¹⁹ in addition to a report summarizing the Commission’s work; *The High-Speed Rail Summary Report and Action Plan*, released December 13, 1996. The Commission recommended a network of high-speed rail similar to the one presented to the voters nearly 12 years later; a segment linking the centers of San Francisco and Los Angeles, mostly following State Highway 99 through the Central Valley before swinging southeast to run through Palmdale and with additional segments connecting to Sacramento and San Diego. It was estimated to cost between \$12.1 and \$16.5 billion for the San Francisco to Los Angeles segment and between \$19.8 and \$24.6 billion (in 1996 dollars) for the entire statewide system.²⁰

The Commission sought to establish a “base funding source” that could reliably furnish 70-85%²¹ of the capital required for construction. Quoting from the Summary Report:

“In order to qualify as a base funding source, the source must be able to substantially finance the construction of the system, secure debt against the revenue source, and provide funding irrespective of the construction status or

¹⁶ Senate Concurrent Resolution 6, Filed with Secretary of State July 20, 1993, Whereas Section, paragraph 9. See http://www.leginfo.ca.gov/pub/93-94/bill/sen/sb_0001-0050/scr_6_bill_930720_chaptered

¹⁷ Senate Concurrent Resolution 6, Filed with Secretary of State July 20, 1993, Resolved Section, paragraph 13, items 1-5

¹⁸ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Appendix B, Document available at Claremont Colleges, Honnold/Mudd Library, Claremont, CA.

¹⁹ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Executive Summary, page 1

²⁰ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Capital Cost Summary Tables, pages 3-25 and 3-27

²¹ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Major Secondary and Supplemental Funding Sources, pages 5-7 to 5-10, Secondary Funding Sources expected to each contribute less than 2% to the construction costs and Supplemental Funding Sources each expected to contribute less than 1% to the construction costs, the total was expected to close the funding gap left by the base or “primary funding source”.

operational readiness of the system. In addition, the source must have a stable and reliable revenue growth potential.”²²

After analyzing sales taxes, gas taxes, airport taxes, highway tolls, federal funding, and state funding, the Commission found that only a 5 cent increase in the state’s gasoline tax, or a ¼% increase in the state sales tax levied statewide, or a ½% increase in the state sales tax levied only in counties served by high speed rail met the Commission’s criteria to “provide a realistic means of funding the project”.²³ Of these options, the Commission seemed to favor a sales tax because of their concern over Section 1(b) of Article 19 of the California Constitution limiting the purposes for which gasoline taxes may be used.²⁴ However, the Commission left it up to the incoming California High-Speed Rail Authority to make the final decision.

Private funding was not considered a possibility because of the project’s risk, but was thought of as a way to finance extensions to Sacramento and San Diego once the San Francisco to Los Angeles portion was shown to be profitable.²⁵ In other words, future profits of an operating line could be sold to investors in return for a portion of the capital needed to construct the extensions. Also, the Commission recognized that federal high-speed rail programs amounted to only \$15 to \$25 million per year under the then-current authorizations that were scheduled to end in 1997 and therefore could not be considered a significant or predictable funding source.²⁶

With no private or federal support for the initial Los Angeles to San Francisco route, the Commission recognized an obvious fact; if Californians wanted a high-speed rail system, they would have to pay for it themselves. To implement the system, the Commission’s first recommendation was that the Authority secure the statutory authority and the base funding source for the system. Quoting from the Commission’s 1996 report: “There can be no significant progress on high-speed rail implementation nor can a private partner be selected until the voters have approved a source of base funding.”²⁷

²² *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Overview of Funding Sources, page 5-2

²³ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Base Funding Options, page 5-3

²⁴ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Base Funding Options, page 5-5

²⁵ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Financing the System – Introduction, page 5-1

²⁶ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Base Funding Options, page 5-6

²⁷ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Executive Summary, page ES-16

The California High-Speed Rail Authority – 1997 to 1999

Senate Bill 1420 (Kopp) created the High-Speed Rail Authority and stated that *“the Authority shall prepare a plan for the construction and operation of a high-speed train network for the state, consistent with and continuing the work of the Intercity High-Speed Rail Commission conducted prior to January 1, 1997.”*²⁸ Repeating verbatim words found in Senate Concurrent Resolution 6, except for the plurality of the word “sources”, SB1420 framed the mandate for the newly formed Authority: *“In order for the state to have a comprehensive network of high-speed intercity rail systems by the year 2020, it must begin preparation of a high-speed intercity rail plan similar to California’s former freeway plan and designate an entity **with stable and predictable funding sources to implement the plan.**”* (Emphasis added).²⁹

Beginning in 1997 and continuing through 1999 the Authority, using many of the same contractors used by Commission, repeated the Commission’s work and came to largely the same conclusions. In December 1999 the Authority released its 2000 Business Plan, showing capital costs of \$25 billion (in 1999 dollars) for the entire statewide system.³⁰ The plan also laid out a sixteen-year project development (6 years) and construction (10 years) schedule for the statewide system.³¹ It contemplated “specific revenue-producing segments could be completed and opened earlier in the implementation schedule. For example, the core segment from Los Angeles to San Francisco could potentially be completed at the end of the seventh year (of the 10 year construction period) with completion of the remaining segments to follow.”³²

With regard to funding the system, the Authority’s 2000 Business Plan presented two funding approaches; a “full funding scenario” based on a temporary sales tax and postulated on a decision to proceed with the statewide system in the year 2000, and a “phased funding approach” that promised to secure resources as necessary to “complete discrete phases of the project as expeditiously as possible.”³³ The 2000 Business Plan also states that in March 1999 “the Authority adopted policies that served as assumptions to guide the development of both funding strategies.” Board Meeting minutes and supporting documents from March 1999 are missing from the Authority’s website. However, the 2000 Business Plan does refer to policies adopted by the Authority in March 1999 and itemizes these clearly in the plan.³⁴ Pertinent items from the plan are:

²⁸ Senate Bill 1420 (Kopp), Section 185032. See: http://www.leginfo.ca.gov/pub/95-96/bill/sen/sb_1401-1450/sb_1420_bill_960924_chaptered.pdf

²⁹ Senate Bill 1420 (Kopp), Section 185010(h). See: <http://www.leginfo.ca.gov/cgi-bin/displaycode?section=puc&group=184001-185000&file=185000-185012>

³⁰ 2000 Business Plan, Section 2.3, Table 2.1, Capital Cost by Segment. See 2000 Business Plan http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2000_FullRpt.pdf

³¹ 2000 Business Plan, Section 2.2, Figure 2.3, Implementation and Construction Schedule

³² 2000 Business Plan, Section 2.2, Phase 3: Final Design and Construction

³³ 2000 Business Plan, Section 6.1, Two Funding Approaches, paragraph 1.

³⁴ 2000 Business Plan, Section 6.2, Financial Plan Policies

“The financial plan shall be prepared with a statewide temporary sales tax as the state revenue source, to the extent that state public funds are needed for the capital costs of building the high-speed train network, and only for so long as they are needed.”

“The financial plan shall presume that the state will fund the base system fully and that no local funding participation shall be assumed in the base system.”

“The Authority shall diligently seek partnership funding from the federal government to construct the high-speed train system. **However, federal grant funding shall not be included in the Authority’s financial plan until a funding commitment is expressed by either the Congress or the administration.** To the extent possible, advisable, and cost effective, the Authority should seek federal loans or credit enhancements.” (Emphasis added)

With the December 1999 deadline for release of the 2000 Business Plan approaching, the Authority was forced to select a preferred funding strategy. Drafts of the plan’s Executive Summary, which included a section on funding to be voted on during the November 17, 1999 board meeting, began to circulate. In his November 9th draft of the Executive Summary, addressed to Board members Leonard and Bates, Executive Director Mehdi Morshed writes: “While the Authority has sufficient information and analyses to conclude that a high-speed train is a smart investment and should proceed, we do not believe asking the people of California to make a full-funding commitment for the project is a prudent course of action at this time for the following reasons.” The Executive Director’s reasons included; 1) necessary environmental work to define with more specificity the corridors, station locations, and cost of the system, and 2) two years of substantive discussions with the private sector and the federal government “which will likely reduce the investment the people of California will need to make in the system”.³⁵ In Director Morshed’s revised draft, written for the entire Board on November 15th, the last words of the prior draft were rewritten as “which will likely produce major reductions in the investment the people of California will need to make in the system.”³⁶

Resolution HSRA 99-8 *Motions on Recommendations to the Authority to Become Part of the Business Plan* detailing a preferred funding strategy was brought up at the November 17th Board Meeting and approved unanimously (9-0).³⁷ The motion “recommended to the Governor and the Legislature that California not proceed to fund the project fully in 2000, either through legislative action or by placing a full-funding proposal on the November 2000 ballot for the

³⁵ Memorandum from Executive Director Mehdi Morshed to Bill Leonard and Dr. Ernest Bates (Board Members), Subject: Conclusions and Recommendations, dated November 9, 1999, Executive Summary attachment, page 5. Located in California State Archives and not found on the Authority’s website.

³⁶ Memorandum from Executive Director Mehdi Morshed to Chairman and Authority Board Members, Subject: Draft Business Plan, dated November 15, 1999, Executive Summary attachment, page 5. Located in California State Archives and not found on the Authority’s website.

³⁷ FAX from Executive Director Mehdi Morshed to Congressman Jim Costa, Resolution HSRA 99-8 *Motion on Recommendations to the Authority to Become Part of the Business Plan*. Located in California State Archives and not found on the Authority’s website.

voters to decide.” It did recommend an expenditure of \$25 million over two years for further program level environmental work. If the system still proved viable, it recommended spending \$350 million over the subsequent three to four years to achieve full environmental clearance. In addition, it called for “an aggressive statewide effort to increase federal funding for both conventional and high-speed trains in California.”

Wording regarding potential savings to Californians did appear in the 2000 Business Plan Cover Letter. The Letter speculated that “greater private sector funding, coupled with federal funding, would decrease greatly the amount Californians would need to invest, perhaps to only about one-third of the total project cost”.³⁸ Such speculation also made its way into the plan’s Executive Summary which said, “it is reasonable to anticipate that the federal government would become a financial partner in this project, reducing the capital needs to be borne by the California taxpayer.”³⁹

Both funding strategies made it into the 2000 Business Plan, but only the recommended strategy, the “phased funding plan,” has been followed by the Authority since 2000. Stating that Californians would perhaps need to pay for “only about one-third of the total project cost”, although totally unsupported in the plan, fit well with subsequent legislation scheduling a vote on issuance of \$9 billion in high-speed rail bonds in November 2004.⁴⁰ The Authority’s hoped-for significant private funds or grants from non-existent federal programs to create a “phased-funding plan” ignored the Authority’s mandate still found in Section 185010 of the Public Utilities Code, which reads as follows:

“185010(h) In order for the state to have a comprehensive network of high-speed intercity rail systems by the year 2020, it must begin preparation of a high-speed intercity rail plan similar to California's former freeway plan and designate an entity with stable and predictable funding sources to implement the plan.”

Leery of levying more taxes on Californians, Governor Gray Davis never supported a sales tax that could have created a stable and predictable funding source to pay for high-speed rail. Instead, he would support the “car tax” to help solve the state’s fiscal woes and be recalled from office in 2003.

³⁸ 2000 Business Plan Cover Letter addressed to Governor Gray Davis and Members of the California Legislature, page 1, final paragraph. See http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2000_FullRpt.pdf

³⁹ 2000 Business Plan Executive Summary, Options and Recommendations section, page 3

⁴⁰ Senate Bill 1856 (Costa), Safe Reliable High-Speed Passenger Train Bond Act, Division 3 of Streets and Highway Code, Chapter 20, Article 3, SEC. 4(a) See: http://www.leginfo.ca.gov/pub/01-02/bill/sen/sb_1851-1900/sb_1856_bill_20020919_chaptered.pdf

Part III

A Funding Plan That Never Materialized

Delayed a Funding Plan – 2000 to 2008

In the wake of the 2000 Business Plan's recommendation to pursue a "phased funding plan" and sunset provisions in existing law calling for termination of the Authority on June 30, 2001 unless a specified financial plan was approved by the Legislature or the voters prior to that date, AB1703 *High-speed rail service* (Florez) was enacted into law on September 28, 2000 extending the termination date of the Authority until December 31, 2003 and modifying section 185032 of the Public Utilities Code regarding plan submission⁴¹.

With still no funding plan in sight, SB796 *High-Speed Rail Authority* (Costa) was enacted into law on September 19, 2002 eliminating the termination date of the Authority and obsolete provisions of existing law relating to submission of a plan to voters by 1998 or 2000. It instead authorized the Authority to submit financial plans to the Governor and to the Legislature.⁴² On that same day, SB1856 *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century* (Costa) became law. It called for the issuance of \$9.95 billion in state general obligation bonds to be submitted to the voters on November 2, 2004. Section 1 of SB1856 called for initially linking San Francisco and the Bay Area to Los Angeles to serve as "*the backbone*" of the statewide system and speculated that it could be in "*limited operation by 2008.*" The bond funds were "*intended to encourage the federal government and private sector to make a significant contribution towards construction of the high-speed train network.*"⁴³

Two year later, now with Governor Schwarzenegger having replaced the recalled Gray Davis, but with still no commitments of federal or private funds to construct a high-speed rail project, SB1169 *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century* (Murray) was signed into law on June 24, 2004 pushing out the voter approval of rail bonds to November 7, 2006⁴⁴. Two years later, and again with no commitments of federal or private funds, AB713 *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century* (Torrico) was signed into law on June 27, 2006 pushing out the voter approval of rail bonds to November 4, 2008⁴⁵.

⁴¹ Assembly Bill 1703 (Florez) *High-speed rail service*; Legislative Council's Digest, section (1), paragraph 2; Public Utilities Code Section 185020(h); Public Utilities Code Section 185032(a)(1). See:

http://www.leginfo.ca.gov/pub/99-00/bill/asm/ab_1701-1750/ab_1703_bill_20000928_chaptered.pdf

⁴² Senate Bill 796 (Costa) *High-Speed Rail Authority*; Public Utilities Code Section 185034(8) and (9).

See: http://www.leginfo.ca.gov/pub/01-02/bill/sen/sb_0751-0800/sb_796_bill_20020919_chaptered.pdf

⁴³ Senate Bill 1856 (Costa), the *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century*; Section 1 paragraphs (b), (c), and (d). See: http://www.leginfo.ca.gov/pub/01-02/bill/sen/sb_1851-1900/sb_1856_bill_20020919_chaptered.pdf

⁴⁴ Senate Bill 1169 (Murray) the *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century*; SEC 5

http://www.leginfo.ca.gov/pub/03-04/bill/sen/sb_1151-1200/sb_1169_bill_20040624_chaptered.pdf

⁴⁵ Assembly Bill 713 the *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century*; SEC 4

http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0701-0750/ab_713_bill_20060627_chaptered.pdf

Governor Schwarzenegger's Qualified Support for Rail Bonds

Costa's original bond measure of 2002, and the two subsequent measures extending the vote on the bonds, spoke very little about funding plan requirements as a precursor to the issuance of the bonds. In fact, the words "funding plan" or "financial plan" do not appear anywhere in these pieces of legislation. The requirements for a "*rail plan similar to California's former freeway plan*" ...*with stable and predictable funding sources to implement the plan*" (still found in Section 185010(h) of the Public Utilities Code today) were written into the enabling legislation for the Commission and for the Authority, not the bond legislation of 2002, 2004, or 2006.

Governor Schwarzenegger's budget for 2008-2009, released in January 2008 called for: "Modifications to the Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century, currently scheduled for the November 2008 ballot (\$10 Billion) to ensure that appropriate financing is available to begin building the project."⁴⁶

The requirements of the funding plan were further clarified in the Governor's 2008-2009 Budget Revisions, released in May 2008. The Revised Budget language included the following passages:

"The administration will be proposing amendments to the *Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century* to ensure an appropriate balance between **assuring that expenditures of the bond funds will result in operational high-speed rail services** and providing the flexibility needed to attract federal and local government, as well as private sector, participation in funding, constructing, and operating the system. The following changes to the bond legislation are being proposed (Emphasis added).

Limit the amount of bond funding that may be used for engineering work, environmental studies needed to obtain permits, and preservation of right-of-way to enable project costs to be more accurately determined and project risk to be reduced before other parties' funds are fully committed. This will help pave the way for public and private partners to participate in the project, while limiting the amount of bond funds at risk.

Before any construction or equipment purchase contracts can be signed for a portion of the system, there must be a complete funding plan that provides assurance that all funding needed to provide service on that portion of the system is secured. (Emphasis added)⁴⁷

⁴⁶ January 2008 Budget Highlights, Strategic Growth Plan section, page 29. See: <http://www.dof.ca.gov/budget/historical/2008-09/governors/highlights/documents/HINF.pdf>

⁴⁷ Governor's May Budget Revision 2008-09, Business Transportation and Housing section, pages 27-28. See: http://www.dof.ca.gov/budget/historical/2008-09/may_revision/documents/BS-BTH.pdf

Taken in context with reference to “operational high-speed rail services” the word “service” must be taken as a reference to operational high-speed rail service. Clearly the Governor’s support for the high-speed train project was contingent on assurances that the Authority would have secured funds to complete a useable segment of the high-speed rail project before committing funds to begin construction or to purchase equipment.

Requirements of a Funding Plan and Other Tax Payer Protections – Assembly Bill 3034

In response the Governor’s January 2008 request for modifications to the existing rail bond act “to ensure that appropriate financing is available to begin building the project”, Assembly Member Cathleen Galgiani introduced AB3034, *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century*, on February 22, 2008. In what amounted to revisions of Costa’s original 2002 bill, Galgiani’s bill was amended as it progressed through the Assembly and then the Senate. Revisions dealing with construction of the high-speed train system and its funding are discussed in this section.

The Assembly’s Revisions:

AB3034, as Introduced in Assembly February 22, 2008⁴⁸ (Authors/Coauthors/Sponsors – 4)

2704.04(c)– Deleted the requirement that a segment from San Francisco Transbay Terminal to Los Angeles Union Station (SF-LA) be “*fully funded*” before allowing bond funds to be spent on other segments and then revised other listed segments to incorporate pieces of the SF-LA segment.

2704.08(c) – Inserted requirement stating that “*in selecting each specific segment for construction and prior to awarding a construction contract, the authority shall have a detailed funding plan for that segment that identifies the full cost of constructing the segment and the sources of all revenues needed to complete construction of the segment*”

2704.08(d) – Inserted a requirement that in prioritizing segments the Authority “*shall give priority to those segments that require the least amount of bond funds as a percentage of total cost of construction, shall consider the utility of that segment for other passenger rail services, and shall ensure that any other passenger service provided on that segment will not result in any operating or maintenance cost to the authority.*”

The reference to a “*funding plan*” is made only once in Galgiani’s original bill, but that is once more than in Costa’s original bill. Also, the reference to prioritizing segments based on “*the utility of that segment for other passenger rail services*” may later have been cited by the Authority as justification for building an Initial Construction Segment that could be used by

⁴⁸ AB 3034, as Introduced in Assembly February 22, 2008. See:
http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080222_introduced.pdf

Amtrak. As will be discussed later in more detail, the Authority had previously adopted their May 2007 Phasing Plan outlining possible early use of some segments by Metrolink (LAUS to Palmdale) and potential cost sharing with both Metrolink and Caltrain. The Authority's Executive Director, Medhi Morshed, speaking of this possibility before the Assembly Select Committee on Rail Transportation on April 3, 2008, said:

“We did a Phase 1 work which is out of the 800 miles where do we build first and the most promising place to build the Phase 1 would be between San Francisco and Anaheim. That's where you begin with close to about a \$1 billion per year surplus. And within that over a ten year period we are going to build that in segments and we are going to look at segments that are going to get some initial benefits. And that looks like most likely it is going to be San Francisco to San Jose segment which we can actually make improvements in conjunction with the CalTrain people and they can begin to use the system while we are building it, a similar situation exists between Los Angeles and Anaheim, and probably Los Angeles and Palmdale”⁴⁹

Amtrak usage of high-speed rail track is never brought up in either the May 2007 Phasing Plan or Director Morshed's remarks made before the Select Committee on Rail Transportation.

AB3034 as Amended in Assembly April 9, 2008⁵⁰ (Authors/Coauthors/Sponsors – 5)
Section 2704.04(b)(1) – Listed segments (A)-(F) now referred to as “*corridors*”. This is the first use of the word “*corridor*” with respect to high-speed rail.

Section 2704.04(b)(2) – Added “*financing obligations*” to operations and maintenance as costs that must be covered before using revenue to fund construction of the system. This seems to be a reference to using revenues to pay potential private investors in return for their up-front construction capital.

Section 2704.08(d) – Deleted “*each specific segment*” and replaced with “*segments*” as if envisioning that multiple segments could be constructed concurrently (i.e. when building from SF to LA). This interpretation is consistent with Executive Director Morshed's remarks of April 3, 2008.

⁴⁹ Assembly Select Committee on Rail Transportation, April 3, 2008, Disc 1 of 1 #08-0403C1. Director Morshed's remarks begin at 1 hour 32 minutes 30 seconds on disc.

⁵⁰ AB 3034, as Amended in Assembly April 9, 2008. See:

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080409_amended_asm_v98.pdf

AB3034 as Amended in Assembly April 21, 2008⁵¹(Authors/Coauthors/Sponsors – 9)

Section 2704.04(b)(2) – Inserted wording stating nothing in this section shall prejudice authority’s selection of alignment from the Central Valley to the Bay Area in its certification of the EIR.

The Senate’s Revisions:

In May 2008 when the Governor released his May Budget Revision, and with more clarity than in January, he called for “assuring that expenditures of the bond funds will result in operational high-speed rail services.” This seems to have resulted in numerous and significant amendments to AB3034 as it progressed through the Senate.

AB3034 as Amended in Senate June 26, 2008⁵²(Authors/Coauthors/Sponsors – 36)

Section 185033 – Added to the Public Utilities Code to require the Authority’s 2008 Business Plan to be submitted to Legislature not later than October 1, 2008. The contents of the plan to be submitted were clearly enumerated, including a requirement the Authority include “*an estimate and description of the total anticipated federal, state, local, and other funds the authority intends to access to fund the construction and operation of the system.*”

Section 185035 – Added to Public Utilities Code requiring a Peer Group (duties and membership detailed) to evaluate the Authority’s funding plan.

Section 2704.01 – Amended to include defined terms including: (f) “*Corridor*” and (g) “*Segment*”.

Section 2704.06 – Added wording to tighten control of the Legislature over release and use of bond proceeds.

Section 2704.08(a) – With regard to no more than one-half of construction costs to be derived from bonds, the word “*segment*” was deleted and the words “*corridor or usable segment thereof*” were added. This is the first use of the term “*usable segment*”. It would be used 23 more times in this amended version of AB3034.

⁵¹ AB 3034, as Amended in Assembly April 21, 2008. See:

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080421_amended_asm_v97.pdf

⁵² AB 3034 as Amended in Senate June 26, 2008. See:

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080626_amended_sen_v96.pdf

Section 2704.08(c) – Added extensive wording strengthening the requirement of a “*funding plan*” and clearly delineating its requirements. This is one of five references in AB3034 to a “*funding plan*”.

Section 2704.08(d) – Added a new paragraph with extensive wording requiring a second “*funding plan*” and clearly delineating its requirements.

Section 2704.08(e) – Added a new paragraph with requirement Authority promptly inform Governor and the Legislature of material changes that would jeopardize completion of the corridor as previously planned.

Section 2704.08(f) – Added projected ridership and revenue and the need to test high-speed trains at 220 mph to the criteria for prioritizing the selection of corridors or usable segments for construction.

AB 3034 as also Amended in Senate as of July 7, 2008⁵³ (Authors and Coauthors -36)

185035(d) – Added to require the Authority to provide the Peer Review Group any and all information they might request.

Section 2704.01(g) – The defined term “*Segment*” is changed to “*Usable Segment*”. Definition is unchanged from previous definition. Only the word “*usable*” is added. This seems to indicate that when used previously, a “*segment*” was assumed to be “*usable*”. This change makes that assumption undeniable. After being redefined, this term is used twenty-five times in AB3034.

Section 2704.04(b)(1) – added language allowing bond expenditure for capital costs “*for the usable segment of the high-speed train system between San Francisco Transbay Terminal and Los Angeles Union Station and Anaheim. Once construction of the San Francisco-Los Angeles usable segment is fully funded, all remaining funds described in this subdivision shall be used for eligible capital costs, as described in subdivision (c)*”.

Here, the amendment’s author restored language that had been deleted from Costa’s 2002 bill when Galgiani’s AB3034 was introduced February 22. The text then continues with previously existing wording . . . (c), *for the following high-speed train system corridors*: [corridors are then listed] Wording is clumsy at best because the listed corridors include San Francisco to Los Angeles (broken into two pieces). Still, one could argue that “*used for eligible capital costs*” means “*used for eligible capital costs of listed corridors other than those already funded*”(i.e. San Francisco to Los Angeles)

⁵³ AB 3034 as Amended in Senate July 7, 2008. See:

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080707_amended_sen_v95.pdf

Section 2704.08(a) The words “*track and station costs*” used immediately before the words “*of each corridor or usable segment*” are deleted, which clarifies that not more than 50% of the total cost of construction of each a corridor or usable segment thereof was to derive from bond funds rather than simply referring to “*track and station costs.*” This is an important change as the Authority seeks to build merely track and stations on the 130 mile long Initial Construction Segment in the Central Valley.

AB 3034 as Amended in Senate as of July 10, 2008⁵⁴ (Authors and Coauthors -38)

2704.04.(a) – Added words saying that approval of bond measure shows intent of Legislature and people of California to initiate construction of a high-speed train system “*that connects San Francisco Transbay Terminal to San Jose to Merced to Fresno to Bakersfield to Palmdale to Los Angeles, and to Anaheim...consistent with EIR’s of Nov 2005 “and July 9, 2008”*”. Wording seems to indicate that SFTBT to LAUS/ANA was to be the first corridor built, not merely some short portion of it. This is consistent with 2008 Business Plan then due out October 1, 2008, and importantly it is consistent with wording of the May 2007 phasing decision made by the Authority.

2704.04.(b)(1) – Changed the words “*usable segment*” to “*corridor*” in reference to the high-speed train system connecting SFTBT to LAUS and Anaheim. Again, this seems to imply that this corridor was to be built as a singly funded project. Again, this is consistent with 2008 Business Plan that was due out October 1, 2008

2704.04.(b)(2) – Deleted requirement to “*fully fund*” SF to LA before funding other eligible capital costs found in 2704.04.(b)(1) and inserted new paragraph 2704.04.(b)(2) as follows: *Upon a finding by the authority that expenditure of bond proceeds in corridors other than the corridor described in paragraph (1) would advance the construction of the system and would **not have an adverse impact on the completion of Phase 1 of the high-speed train project, as adopted by the authority in May 2007** (Emphasis added) and described in paragraph (1), the authority may request funding for capital costs, and the Legislature may appropriate funds described in paragraph (1) in the annual Budget Act or separate statute, to be expended for the following high-speed train corridors:*

This is the first use of the term “*Phase 1*” and references it “*as adopted by the Authority in May 2007*”. It was at their May 2007 Board Meeting that the Authority debated what to build first, and by a 5-2 vote, chose San Francisco to Los Angeles/Anaheim.

⁵⁴ AB 3034 as Amended in Senate July 10, 2008. See:

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080710_amended_sen_v94.pdf

Relevant Background Information About the May 2007 Phasing Plan

The May 23, 2007 Board Meeting Minutes in a section entitled “*Project Phasing*” reveal the reasons for the Authority’s choice of San Francisco to Los Angeles/Anaheim. Executive Director Morshed recommended this first phase selection because “**This segment**” (emphasis added) would be most likely to attract outside investment, have an operating surplus and it would be long enough to develop a train system that could travel at high speeds.”⁵⁵ It is then referred to seven times in the minutes as a “starter segment.”

Another important document listed on the Authority’s website as part of the May 2007 Board Meeting Materials is a document entitled *The California High-Speed Train Network – Next Steps to Construction*. The link accessing this document is entitled *May 2007 Phasing Plan*. This seven-page document refers to Phase 1 as the “backbone” of the statewide network and describes how it must be built in stages coordinated to be completed at roughly the same time. For instance, work on Mountain Crossings “must also commence early” because of the complexity of the tasks and “are likely to be the last completed”. In the Central Valley, “the construction, equipment, manufacturing, testing, and commissioning (of high-speed trains) will take considerable time and are in the critical path of the project. Therefore, work must start as soon as possible between Merced and Bakersfield.”⁵⁶

The term “critical path” is a common engineering term. When a large project is broken into smaller projects and the large project is essentially unusable until all smaller projects are completed, the smaller project requiring the most time to complete is referred to as being on the “critical path”. Meeting Minutes record after lengthy discussion and some dissention (principally from Member Crane who was concerned over the lack of “financial commitments from different groups to have the financing for the project ready before construction begins” and Member Schenk who wanted Los Angeles to San Diego “included in the first phase of construction”) Member Stapleton moved to approve the “project phasing recommendations” and the motion carried 5-2 with Crane and Schenk voting “no”. It appears the “project phasing recommendations” being approved were those voiced by Morshed and written into the document entitled *The California High-Speed Train Network – Next Steps to Construction*.

⁵⁵ May 2007 Authority Board Meeting Notes, page 4, “Project Phasing” See:

<http://www.cahighspeedrail.ca.gov/assets/0/152/198/4cfc4b61-80b2-4175-b183-d5f37681fc71.pdf>

⁵⁶ *The California High-Speed Train Network – Next Steps to Construction*; The link accessing this document is entitled *May 2007 Phasing Plan*; “backbone” reference on page 3; timing of construction of Mountain Crossing and Merced to Bakersfield references on page 6; “critical path” reference found on page 6. See:

http://www.hsr.ca.gov/docs/brdmeetings/2007/brdmtg0507_phaseplan.pdf

In addition to the May 2007 Phasing Plan and Meeting Minutes, the May 2007 Meeting Materials contain links to a Financing Plan Report⁵⁷ and Financing Plan Presentation.⁵⁸ In all of these documents, there is never a reference to developing a Funding Plan or Business Plan for a sub-section of Phase 1. The Authority's documents speak of funding being an issue and certainly they would have liked to have been able to start with a smaller "starter segment", but anything smaller would evidently not have met Director Morshed's three criteria. Any reasonable person reading the May 2007 Meeting Minutes on Project Phasing, the phasing plan itself, the Financing Plan Report, and the Financing Plan Presentation can only conclude that the Authority envisioned the entire San Francisco to Los Angeles/Anaheim "starter segment" as a single project and was seeking to create a single funding plan for it.

Throughout 2007 and up until its publication on October 27, 2008, the Authority's financial consultant, Infrastructure Management Group, worked on a funding plan entitled *Financial Plan for the California High Speed Rail Authority- San Francisco to Anaheim Segment*.⁵⁹ Again, nowhere in this financial plan is there a discussion of funding the construction of anything short of the San Francisco to Los Angeles/Anaheim route, which in now commonly referred to as Phase 1 of the statewide high-speed train system.

Additional evidence showing the Authority's intent to build Phase 1 as one project with one funding plan is found in the 2008 Business Plan, which presented one financing plan for this phase and concluded with these words: "This Business Plan demonstrates how the system's backbone link (Los Angeles/Anaheim to San Francisco) can be financed."⁶⁰

Therefore, when section 2704.04.(b)(2) was amended to include the words "*completion of Phase 1 of the high-speed train project, as adopted by the authority in May 2007*" the Authority was bound by statute to develop a funding plan for all of Phase 1 as a single project.

Section 2704.08(b)(1) – the word "*paragraph (1)*" of subdivision (b) of Section 2704.04 was deleted because now subdivision (b) contained two paragraphs and "*any eligible capital cost on each corridor, or usable segment thereof*" were described with both paragraphs together. This is important because the first paragraph now spoke of a "*corridor*" of a high-speed train system between SFTBT and LAUS/ANA and the second paragraph spoke of "*completion of that Phase*

⁵⁷ *Preliminary Funding Strategy and Finance Plan: Bay Area to Anaheim Segments-Report*. Accessed from the Authority's website with a link entitled *May 2007 Financing Plan Report*. See:

http://www.hsr.ca.gov/docs/brdmeetings/2007/brdmtg0507_financialrpt.pdf

⁵⁸ *Preliminary Funding Strategy and Finance Plan: Bay Area to Anaheim Segments-Presentation*. Accessed from the Authority's website with a link entitled *May 2007 Financing Plan Presentation*. See

http://www.hsr.ca.gov/docs/brdmeetings/2007/brdmtg0507_financialplan.pdf

⁵⁹ IMG's Financial Plan for the California High-Speed Rail Authority San Francisco to Anaheim Segment, dated October 27, 2008. See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2008_SRC_FinPlan.pdf

⁶⁰ 2008 Business Plan, page 21, section entitled Finance Plan. See.

http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2008_FullRpt.pdf

1 of the high-speed train project, as adopted by the authority in May 2007 and described in paragraph (1).”(Emphasis added) Once again, “*as adopted by the authority in May 2007*”, San Francisco Transbay Terminal to Los Angeles Union Station/Anaheim was to be ONE project funded by ONE funding plan.

AB 3034 as Amended in Senate as of August 6, 2008⁶¹ (Authors and Coauthors -38)

185033 of the Public Utilities Code was changed to move up the date of the 2008 Business Plan from October 1 to September 1. That plan was actually released November 7, four days after the ballot measure was voted on.

SEC. 4. Section 1 of Chapter 697 of the Statutes of 2002, as amended by Section 1 of Chapter 71 of the Statutes of 2004, was repealed and rewritten into SEC 8.

SEC. 5. Section 2 of Chapter 697 of the Statutes of 2002, as amended by Sections 1 and 2 of Chapter 44 of the Statutes of 2006, was repealed and rewritten in to SEC 9.

SEC. 6. Section 3 of Chapter 697 of the Statutes of 2002, as amended by Section 3 of Chapter 44 of the Statutes of 2006, repealed and was rewritten in to SEC 9.

SEC. 7. Section 4 of Chapter 697 of the Statutes of 2002, as amended by Section 4 of Chapter 44 of the Statutes of 2006, is repealed. This section mostly pertains to the ballot wording in the bond act and not the funding.

2704.04(a) and (b) – Amended to delete an important, but perhaps redundant passage:

...”upon appropriation by the Legislature in the annual Budget Act or separate statute, shall be used for (A)planning the high-speed train system and (B) capital costs, described in subdivision (c), ~~for the usable segment corridor of the high-speed train system between San Francisco Transbay Terminal and Los Angeles Union Station and Anaheim~~” This may have just been a cleanup of wording because paragraphs (c) does not specifically list as a single segment SFTBT to LAUS/ANA. Instead, it inserts a new paragraph (2) regarding the plan “*adopted by the authority in May 2007*”, renames old paragraph (2) as (3) leaving wording identical except for now referencing paragraph (2) regarding the May decision rather than paragraph (1).

AB3034, as amended in the Senate August 6th appears to be very close, if not identical to the bill eventually approved and signed into law. The text of the August 6th version, taken from the

⁶¹ AB 3034 as Amended in Senate August 6, 2008. See:

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080806_amended_sen_v93.pdf

same government website as all other versions, no longer uses ~~strikeout~~ to show newly-deleted wording nor does this version single out new text with *italics*.

The Legislative Council's Digest pointing out recent amendments makes no mention of changes to sections 2704.04(a) and (b). However, the rewrite is extensive and, depending on a reader's viewpoint, the August 6th version may be interpreted as 'watering down' the July 10th version with regard to "*completion of Phase 1 of the high-speed train project, as adopted by the authority in May 2007.*" Others might simply view the changes as a cleanup of wording and point to the fact that the Legislative Council's Digest makes no reference to these changes. Footnotes cited previously for both the July 10th and the August 6th amended version of AB3034 allow for a direct comparison.

2704.07 – This new section was added: "*The authority shall pursue and obtain other private and public funds, including, but not limited to, federal funds, funds from revenue bonds, and local funds, to augment the proceeds of this chapter.*" Significant only to the extent that it was added to stress a point.

2704.08(f)(4) – Wording was added regarding corridor or usable segment selection to include: "*the extent to which the corridors include facilities contained therein to enhance the connectivity of the high-speed train network to other modes of transit, including, but not limited to, conventional rail (intercity rail, commuter rail, light rail, or other rail transit), bus, or air transit.*" This seems in line with the Phasing Plan adopted in May 2007 where parts of the SF to LAUS/ANA that could have early utilization by Metrolink and Caltrain might be given priority.

Executive Director Morshed's Description of the Authority's Actual Funding Plan

At the time a requirement for a funding plan was being written into AB3034, Mehdi Morshed, Executive Director of the Authority, gave voice to the Authority's actual funding plan in testimony made April 3, 2008 at a hearing before the Assembly Select Committee on Rail Transportation. Quoting from the hearing recording:

"We anticipate that the phase 1 of the high speed train system, once it is constructed, after 2-3 years of operation, we'll begin generating over a billion dollars a year in revenue surplus. And that revenue surplus is being used as a way of basically developing a financing for the project. We have a financing plan for the project that Phase 1 is estimated to cost about 30 billion dollars. We're assuming about 9 billion dollars from the state. We assume about a similar amount from the federal government. And the last third of the cost is going to be covered by the private sector utilizing the surplus revenues and the other benefits that the private sector would get from a high-speed train. So that's how the financing of the project is and you know that's going to we anticipate moving forward."

Executive Director Medhi Morshed, April 3, 2008⁶²

⁶² Assembly Select Committee on Rail Transportation, April 3, 2008, Disc 1 of 1 #08-0403C1
Morshed remarks begin at 1 hour 30 minutes 54 seconds on disc.

Morshed’s thoughts found their way into the 2008 Business Plan with a similar level of assurance that they would materialize; none at all. Nearly six years later “none at all” is exactly the amount of private funds secured by the Authority and “none at all” is the amount of federal funds they have been told by Congress to expect in the future.

Part IV

Soaring Costs Magnify the Inadequacies of the Authority's Funding Plan

The 2008 Business Plan

AB3034 mandated that “*the authority shall prepare, publish, and submit to the Legislature, not later than September 1, 2008, “a revised business plan” that was to contain “an estimate and description of the total anticipated federal, state, local, and other funds the Authority intends to access to fund the construction and operation of the system.”*”⁶³ The plan was finally published on November 7, 2008.⁶⁴ This was two months later than statutorily required and after passage of Proposition 1A (enacting statutes of AB3034). It showed all \$9 billion in state high-speed rail bonds along with “targeting” \$24 billion in federal, private and local sources to fund the \$33 billion capital cost of Phase 1.⁶⁵ \$12-\$16 billion of federal funding was explicitly shown.⁶⁶ This was done despite the Authority’s policy going back to 1999, stating that “federal grant funding shall not be included in the Authority’s financial plan until a funding commitment is expressed by either the Congress or the administration.” [See FN34]

Another questionable practice was combining the \$9 billion in bonds, which should have been considered “year-of expenditure dollars”, with costs expressed in 2008 dollars. This deception was corrected one year later when the Authority in its December 2009 Report to the Legislature expressed capital costs in “year-of-expenditure dollars” as demanded by both the Department of Transportation and the Legislature. The result was an updated cost of \$42.6 billion in YOE dollars, still with only \$9 billion in state bonds.⁶⁷

Where once the Authority had speculated that Californians would need to invest, perhaps only about a third of the total project cost [See FN38] and the Authority had been committed to a policy of not including federal grant funding in a financial plan “until a funding commitment is expressed by either the Congress or the administration,” [See FN 34] the Authority now projected that Californians would need to invest only about a fifth of the total project cost and was showing \$17-\$19 billion in federal funding⁶⁸; none of which was at the time a commitment expressed by either the Congress or the Administration.

⁶³ AB 3034 adding Section 185033 to the Public Utilities Code. See: http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080826_chaptered.pdf

⁶⁴ The Cover Letter accompanying the 2008 Business Plan was undated. See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2008_CoverLtr.pdf. The cover Letter for 2008 Business Plan link The news release announcing the plan was dated November 7, 2008. See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2008_NewsRelease.pdf. The link to the News Release.

⁶⁵ 2008 Business Plan, Finance Plan section, page 21. See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2008_FullRpt.pdf

⁶⁶ 2008 Business Plan, Finance Plan section, Figure 26, page 21

⁶⁷ December 2009 Report to the Legislature, Cost of the System, Cost Summary, page 84. See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2009_Legis_FullRpt.pdf

⁶⁸ December 2009 Report to the Legislature, Paying for the System, Financial Plan Overview, page 92

The Draft and Revised 2012 Business Plans

The capital cost situation and prospects for funding would only worsen for the Authority. By November 2011, the capital costs in the Draft 2012 Plan for the San Francisco to Los Angeles/Anaheim phase had ballooned to between \$98.5 and \$117.6 billion in year-of-expenditure dollars.⁶⁹ Costs for the extensions to Sacramento and San Diego went unreported in that Draft 2012 Business Plan. Some \$3.3 billion of one-time, ARRA funding (“stimulus funds”) was now committed by the federal government. But the Revised 2012 Business Plan, released in April 2014, called for much more. Consistent with previous plans, the Authority provided ranges of costs dependent upon the alignment chosen. The eventual alignment chosen is dictated by the environmental permitting process and this process was incomplete in April 2012, as it still is in March 2014. The Authority deals with the problem of a high cost alignment by glossing over the high-end cost estimates and elaborating only on the low-end cost possibility.

The Revised 2012 Business Plan went one step further and elaborated only on the low-end cost (“planning cost scenario”) of a scaled-down Phase 1 where high-speed trains would share track with Caltrain in the Bay Area and Metrolink trains in the Los Angeles Basin. The Authority called this project “Phase 1 Blended”. Phase 1 Blended was estimated to cost \$68.4 billion in YOE dollars, of which \$41.7 billion would come from yet-unsecured “federal support” and \$13.1 billion would come from the private sector. With only \$3.3 billion shown as secured federal support and no committed private investment the total funding gap was \$51.5 billion.⁷⁰

The planning cost scenario rises to \$91.4 billion and funding gap rises to \$74.5 billion if the Full Build of Phase 1 turns out to be necessary to create a system in compliance with other provisions of AB3034 (i.e. travel times, minimum headway, etc.).⁷¹ The April 2012 Plan provides no figure comparable to the \$91.4 billion figure for the possible high-end cost of this project. However, the plan does provide a high-end cost number comparable to the \$68.4 billion number for the planning case scenario of Phase 1 Blended, \$79.8 billion.⁷² Scaling \$91.4 billion by the ratio of \$79.8/\$68.4 yields an estimated high-end cost for the Full Build of Phase 1 of \$106.6 billion and the Authority’s funding gap grows to \$89.7 billion.

The Authority solved some of the April 2012 plan’s funding shortfall by declaring they would build a profitable Initial Operating Segment (IOS) from Merced to San Fernando in spite of

⁶⁹ Draft 2012 Business Plan, released November 2011, Chapter 8 Funding and Financing, page 8-2. See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2012Draft_web.pdf

⁷⁰ Revised 2012 Business Plan, sum of figures found in Exhibits 7-15 *Total sources and uses for IOS to Bay to Basin assuming private-sector investment in 2023* (2013 to 2026) (YOE dollars in millions) and 7-17. *Sources and uses—Phase 1 Blended with private-sector capital* (YOE dollars in millions) See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2012_rpt.pdf

⁷¹ Revised 2012 Business Plan, Executive Summary, page ES-14

⁷² Revised 2012 Business Plan, Exhibit 7-20. *Total sources and uses of funds—increased construction costs* (YOE dollars in millions)

having at least a \$20.3 billion federal funding shortfall for this work.⁷³ The April 2012 plan pushed off the larger funding shortfall into the future.

Before reviewing the Authority's inadequate funding plan for the IOS, it is worth reviewing how the project and its funding plan have evolved since the inception of the Intercity High-Speed Rail Commission twenty-one years ago.

- Twenty-one years have passed since the Commission was charged with preparing “a 20-year high-speed intercity ground transportation plan”. [See FN2]
- The plan first envisioned connected Los Angeles to San Francisco at a cost of between \$12.1 and \$16.5 billion (1996 dollars) along a route stretching a distance of between 398 and 448 miles depending on alignment.⁷⁴ It was to be in revenue service by fiscal year 2005/6.⁷⁵ By April 2012, that vision had translated into a \$91.4 to \$106.6 billion project, 520 miles in length to be completed in 2033.⁷⁶
- The Authority currently makes no cost or completion date estimates for the extensions linking high-speed rail to Sacramento and San Diego.⁷⁷ A reasonable guess made by scaling cost and years of construction time by 800/520 (the length of the statewide system/the length of Phase 1) yields a cost estimate of up to \$164 billion and a completion date of 2044; nearly 40 years after Statewide Program EIR was certified.
- The legislative mandate to the Commission and later to the Authority to develop a “*high-speed intercity rail plan similar to California's former freeway plan and designate an entity with a stable and predictable funding source to implement the plan*” has evolved from dedicated inflation indexed voter-approved taxes that only voters could later decide to repeal into a plan that hopes for (1) massive federal grants from non-existent federal transportation programs, (2) massive private participation when not one penny of private money has been forthcoming in the last twenty-one years, and (3) billions of dollars in local government participation in an era when many of California's cities teeter on the edge of bankruptcy.

Against this backdrop, the Authority's April 2012 plan proposed a funding plan for their IOS connecting Merced to San Fernando that includes \$7.1 billion of the \$8.2 billion in remaining unspent rail bonds.⁷⁸ The estimated cost for the IOS ranges from \$26.9 billion to \$31.3 billion

⁷³ Revised 2012 Business Plan, Exhibit 7-10. *Sources and uses for completing the IOS* (YOE dollars in millions)

⁷⁴ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Capital Cost Summary Table 3.3, page 3-25

⁷⁵ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Project Revenue Financing, page 5-9

⁷⁶ Revised 2012 Business Plan, Exhibit ES-3. Summary of each phased implementation section, page ES-13

⁷⁷ Revised 2012 Business Plan, Exhibit 2-6. Projected milestones for completing the environmental review process/potential construction completion, page 2-28

⁷⁸ Revised 2012 Business Plan, sum of state bond funds shown in Exhibit 7-9 IOS-First Construction funding sources (YOE dollars in millions) and Exhibit 7-10 Sources and uses for completing the IOS (YOE dollars in millions)

expressed in 2011 dollars.⁷⁹ The plan later details the low end (planning cost scenario) of this cost range expressed in year-of-expenditure dollars and arrives at a figure of \$31.3 billion.⁸⁰ The plan does not detail the cost to construct the IOS in year-of-expenditure dollars for the high cost estimate. However, if the low cost estimate expressed in YOE dollars is multiplied by the ratio of \$31.3/\$26.9, the high cost is estimated to be \$36.4 billion in YOE dollars. The Authority's funding plan should cover the high number, \$36.4 billion, and not merely the low number of \$31.3 billion if taxpayers are to be reasonably assured that the Authority will be able to complete the IOS.

The April 2012 plan notes the following committed funding sources for the IOS:

Federal Grants Secured	\$3.3 billion
State Bonds (Prop. 1A)	<u>\$2.7 billion</u>
	\$6.0 billion

This leaves a shortfall of \$30.4 billion if the funding plan is to support the high end of the range of current cost estimates. Interestingly, the Authority's current funding plan calls for:

Federal support	\$20.3 billion
State Bonds (Prop. 1A)	\$4.4 billion
Other Funds	<u>\$.7 billion</u>
	\$25.4 billion

When combined with the \$6 billion in committed funds, these sources exactly match the funds needed for the low cost scenario, but not enough to support the high cost scenario. In other words, even when the Authority simply makes up numbers, they do not make the numbers high enough to ensure the IOS could actually be built. Moreover, because the \$20.3 billion in federal support is merely a wish on the Authority's part, not supported by any existing federal programs or commitments, this funding plan was found to be out of compliance with the requirements of Proposition 1A.⁸¹

⁷⁹ Revised 2012 Business Plan, Exhibit 3-3 Cost to Construct IOS- Central Valley to San Fernando Valley (base year fiscal year 2011 dollars), page 3-8

⁸⁰ Revised 2012 Business Plan, sum of figures tallied in Exhibits 7-9 (IOS First Construction Funding Sources) and 7-10 (Sources and Uses for Completing the IOS)

⁸¹ On August 16, 2013, Sacramento Superior Court Judge Michael Kenny in the case Tos, Fukuda, and the County of Kings versus California High-Speed Rail Authority Et al. ruled in favor of the Plaintiffs

The Authority's Tiny Fig Leaf – Cap and Trade Funds

The Authority seeks to fill the funding gap for the IOS with the promise of Cap and Trade funds. Since “federal support” and “other funds” are as yet uncommitted by any party, the funding gap to be filled by Cap and Trade funds throughout the remaining construction period (2014-2021) is stunningly large.

Required Committed Funds (high end of cost range)	\$36.4 billion
Federal Grants Secured	- \$3.3 billion
State Bonds (Prop. 1A)	<u>- \$7.1 billion</u>
Funding Gap	\$26.0 billion

Into this gap, Governor Brown supports the allocation of \$.250 billion in Cap and Trade funds in this year's state budget to build the IOS when the funding gap averages \$3.25 billion/year each year over the Authority's estimated eight-year construction period. On the face of it, this one-year allocation can be dismissed because it covers less than 8% of the first year's funding gap. Moreover, even if this allocation were to be approved by the legislature in FY14, there is no guarantee that other Cap and Trade funds will be available and/or allocated in future years.

It is worth comparing the current Cap and Trade funding scheme to the requirements for a base funding source once laid out by the Commission in 1996: [FN 22]

“In order to qualify as a base funding source, the source must:

- be able to substantially finance the construction of the system;
- secure debt against the revenue source;
- provide funding irrespective of the construction status or operational readiness of the system; and
- have stable and reliable revenue growth potential.”

With regard to first criteria, “be able to substantially finance the construction of the system”, the \$.250 billion in Cap and Trade funds source fails because it amounts to less than 1% of the total funding gap of the IOS.

With regard to the second criteria, “secure debt against the revenue source” the Cap and Trade fund source fails because a one-time assured revenue cannot be used to secure debt.

With regard to the third criteria, “provide funding irrespective of the construction status or operational readiness of the system,” environmentalists will surely argue that Cap and Trade funds are required to go towards projects that reduce greenhouse gas emissions within the state by the year 2020. As the IOS will not even be in operation until 2022, and will result in substantial and irreversible emissions during its eight-year construction period, Cap and Trade funds also fail this criteria.

Lastly, with regard to the fourth criteria, little is known about the stability, reliability, or growth potential of Cap and Trade funds. However, plaintiffs are currently in court arguing that Cap and Trade fees amount to a tax, and that California's Global Warming Act (AB32) authorizing these mandatory fees was passed without the necessary two-thirds majority called for by Proposition 13 causing this test to also fail.

The Draft 2014 Business Plan – The recently released Draft 2014 Business Plan does not address the funding shortfalls associated with IOS construction or later development of the system (i.e. Bay to Basin, Phase 1 Blended, or Phase 1). The cost of the project is largely unchanged as are the committed sources of funding.⁸² However, previous plans have shown a range of costs, a low-end or “planning cost scenario” and a high-end cost, dependent on the eventual alignment that is chosen. The Draft 2014 Plan eliminates all discussion of high-end costs even though the plan clearly points out that the project level environmental work needed to select a final alignment is incomplete for all but the Merced to Fresno section.⁸³

In another attempt to disguise true costs, the “Phase 1 Full Build” option, mentioned twenty times in the April 2012 plan and estimated to cost \$23 billion more than the Phase 1 Blended option, is not mentioned once in the Draft 2014 plan. The term “Phase 1 Blended” used in the previous April 2012 plan is replaced with the term “Phase 1” in all but four references in the draft 2014 plan. This oversight (that it was left in at all) may be attributed to the fact that the plan is a “draft” and will probably be corrected in the final 2014 plan to remove all traces of “Phase 1 Blended” in an effort to lull the reader into forgetting that Phase 1 is now a degraded Phase 1 compared to previous plans.

The Authority is faced with an intractable funding problem of their own making. They created the problem in December of 1999 when they swung toward favoring a “phased-funding approach” instead of asking the citizens of California to approve a temporary sales tax to create a stable and predictable funding source to implement their plan. Instead, the Authority made a ‘bad bet’ that the federal government would develop a program to fund high-speed rail projects as they had once funded the construction of the Interstate Highway System; a federal excise tax on gasoline paid by motorists in each state and sent back to the states to fund interstate highway projects. No such federal high speed-rail financing program has been created in the nearly fifteen years that the Authority has been waiting for it and no such program is included in the recently passed 2014 federal budget. None is even contemplated.

⁸² Draft 2014 Business Plan, *EXHIBIT 3.5 YEAR-OF-EXPENDITURE COST ESTIMATES*: See: http://www.hsr.ca.gov/docs/about/business_plans/FINAL_Draft_2014_Business_Plan.pdf

⁸³ Draft 2014 Business Plan, Exhibit 1.2 – Completed and Projected Milestones for the Environmental Review Process by Project Section, page 26

Part V

The Authority's Funding Plan Mandate Regarding Environmental Work

Environmental Clearances Required in the Funding Plan Mandates of AB3034

The passage of Assembly Bill 3034 rewrote section 2704.08.(c) of the Streets and Highway code to read:

“No later than 90 days prior to the submittal to the Legislature and the Governor of the initial request for appropriation of proceeds of bonds authorized by this chapter for any eligible capital costs on each corridor, or usable segment thereof, identified in subdivision (b) of Section 2704.04, other than costs described in subdivision (g), the authority shall have approved and submitted to the Director of Finance, the peer review group established pursuant to Section 185035 of the Public Utilities Code, and the policy committees with jurisdiction over transportation matters and the fiscal committees in both houses of the Legislature, a detailed funding plan for that corridor or a usable segment thereof. (2) The plan shall include, identify, or certify to all of the following:[List of Items A through K follows]”

Item (K), the last of the referenced items, reads as follows:

“The authority has completed all necessary project level environmental clearances necessary to proceed to construction.”

When making its initial request for appropriation of proceeds of bonds in 2012 and seeking to begin construction of the Initial Operating Segment running from Merced to San Fernando, the Authority's plan was clearly out of compliance with this requirement and a court has so ruled. [FN81]

The Authority has treated this as a mere technicality and now touts the fact that it has achieved environmental clearance for the Merced to Fresno section where it seeks to begin IOS construction. However, for good reasons, its funding plan to begin building the IOS from Merced to San Fernando is required by statute to certify that the Authority has completed all environmental clearances for the 300-mile IOS. This would include clearances for the segments from Fresno to Bakersfield, Bakersfield to Palmdale, and Palmdale to Los Angeles. The Authority's Draft 2014 Business Plan admits it still does not have these clearances and projects they will not have all of them until the summer of 2015.⁸⁴ The Authority and the public will not have reasonable assurances that completing the IOS is even feasible until all environmental clearances are complete.

⁸⁴ Draft 2014 Business Plan, Exhibit 1.2 – Completed and Projected Milestones for the Environmental Review Process by Project Section, page 26

In addition to passing the test of feasibility, the required environmental work includes completing engineering work up to the 15% level and choosing a final alignment through each section. Both of these completed tasks make it possible to more reasonably estimate costs and the required funds to complete the project.

Quoting from the Certified EIR for the Merced to Fresno section:

After completion of the Statewide Program Level EIR, “The next step in the HST development process includes additional engineering and design and preparation of project EIR/EISs for all HST project sections. This Merced to Fresno Section Project EIR/EIS (Tier 2) evaluates proposed alignments and stations in site-specific detail to provide a complete assessment of the direct, indirect, and cumulative effects of the proposed action, considers public and agency participation in the scoping process, and was developed in consultation with resource and regulatory agencies, including EPA and USACE. FRA and the Authority intend this document to be sufficient to support Section 404 permit decisions and Section 408 permit decisions (as applicable) for alteration/modification of completed federal flood risk management facilities and any associated operation and maintenance, and real estate permissions or instruments (as applicable). Both the EPA and USACE issued letters identifying the Hybrid Alternative as the preliminary LEDPA (March 23, 2012, and March 26, 2012, respectively)”⁸⁵

Statute dictates that ALL environmental clearances be in place as part of the funding plan before the Authority may ask the Legislature for an appropriation of bond funds. Were it not for the law, common sense would dictate this requirement to simply assure Californians the Authority could reasonably expect to build from point A to point B with a reasonable estimate of costs before committing funds for final engineering work and construction.

The Statewide Program EIR/EIS

The Statewide Program EIR/EIS (Statewide EIR) certified in 2005 looked at the a high-speed train system linking all of California’s major metropolitan areas (the Bay Area, Sacramento, the Los Angeles Basin, and San Diego) and compared the environmental costs (“impacts”) and benefits of the statewide system to a No Project Alternative and a Modal Alternative.⁸⁶ Pertinent excerpts from the Statewide EIR are quoted below describing the No Project, Modal, and High-Speed Train Alternatives.

The No Project Alternative

“For the No Project Alternative, both existing and future conditions (2020) are considered. The No Project Alternative represents the state’s transportation system (highway, air, and conventional rail) as it existed in 1999–2000 and as it would be in 2020 with the addition of transportation projects currently programmed for implementation (already in funded

⁸⁵ California High-Speed Train Project EIR/EIS – Merced to Fresno Section, page 1-2. See: http://www.hsr.ca.gov/docs/programs/merced-fresno-eir/final_EIR_MerFres_1Purpose.pdf

⁸⁶ Statewide Program EIR/EIS, Summary, Alternatives Including High-Speed Train, page S-3. See: http://www.hsr.ca.gov/docs/programs/eir-eis/statewide_final_EIR_vol1summary.pdf

programs/financially constrained plans) according to the State Transportation Improvement Program (STIP), regional transportation plans (RTPs) for all modes of travel, airport improvement plans, and intercity passenger rail plans. The No Project Alternative addresses the geographic area serving the same intercity travel market as the proposed HST Alternative (generally, from Sacramento and the San Francisco Bay Area, through the Central Valley, to Los Angeles and San Diego)."

The Modal Alternative

"The Modal Alternative is described as a set of hypothetical improvements representing a possible response to projected intercity travel demand that will not be met by the No Project Alternative. The improvements described for each Modal Alternative component are capacity oriented (e.g., additional traffic lanes for highways with associated interchange reconfiguration and ramp improvements; additional gates and runways for airports). Overall, the highway improvements assumed under the Modal Alternative represent a total of over 2,970 additional lane miles (mi) (4,780 lane kilometers [km]). Two additional highway lanes would be required on most intercity highways, and as many as four additional lanes would be needed to meet forecasted demand in certain segments. Projected airport improvements would include over 90 new gates and five new runways statewide."

The High-Speed Train Alternative

"State-of-the-art, electrically powered, high-speed, steel-wheel-on-steel-rail technology is being considered for a proposed system that would serve the major metropolitan centers of California, extending from the San Francisco Bay Area and Sacramento, through the Central Valley, to Los Angeles and San Diego. State-of-the-art safety, signaling, and automated train-control systems would be used. By 2020, the proposed service would include approximately 86 weekday trains in each direction to serve the study area intercity travel market, with 64 of the trains running between northern and southern California and the remaining 22 trains serving shorter distance markets. Most passenger service is assumed to run between 6:00 a.m. and 8:00 p.m. The proposed system would be capable of speeds in excess of 200 mph (322 kph), and the projected travel times would be designed to compete with air and auto travel. For example, the projected travel time by HST between San Francisco and Los Angeles would be just under 2 hrs and 30 min, and between Los Angeles and San Diego it would be just over one hour. The route representing the highest return on investment from the Authority's Business Plan is used to represent the HST Alternative for general comparison and evaluation with the other system alternatives. This representative system was forecast to carry between 42 and 68 million passengers in 2020, with the potential to accommodate higher ridership by adding trains or using longer trains. For a conservative assessment of potential environmental impacts, the higher ridership forecast is used in describing the proposed HST Alternative and its impacts, and is referred to in the Program EIR/EIS as the "representative demand" ridership. However, for resource topics where the high-end ridership forecasts would result in potential benefits (e.g., energy, air quality, and travel conditions), additional analysis is included to address the impacts associated with the low-end forecasts....

....The cost to implement the representative HST train system, which reflects a similar network of alignment and station options to that presented in the Authority’s Business Plan, is estimated to range between \$33 billion and \$37 billion (2003 dollars), depending on the alignment and station options selected. The cost estimate includes right-of-way, track, guideway, tunneling, stations, and mitigation.”

The three alternatives were then evaluated and compared regarding their key environmental impacts and benefits. The statewide high-speed train network was then chosen as the preferred alternative. A table was presented showing its benefits and impacts, including:⁸⁷

HST Benefits

- Congestion reduction on intercity highways
- Reduction in time of travel
- Decrease in injuries and fatalities on highways
- Overall savings in passenger costs
- Air quality benefit
- Energy benefit

HST Environmental Impacts

- Moderate to high visual impacts especially in scenic open space
- High impact on noise
- Right of Way needs impacting 2,445-3860 acres of farmland
- Adverse impact on 1201-1568 acres of sensitive habitat, wetlands and special status species
- Adverse impact on floodplains, streams, and lakes
- Potential impacts on 1-6 wildlife refuges
- Medium to high ranking for potential impacts on archaeological resources and historical properties
- Impacts on farmlands

The Statewide high-speed train alternative won-out over the other alternatives, but that is NOT what the Authority seeks to build and not even one usable segment of the statewide system is currently scheduled to be completed by 2020; the year used in the Statewide EIR for comparing the three alternatives. There are synergies that come with building the whole statewide system. For instance, the route between Los Angeles and Sacramento mostly uses track that also runs between Los Angeles and San Francisco. Extending the system to Sacramento substantially increases environmental benefits while the increase in environmental impacts is minimal. Likewise, connecting Los Angeles to San Diego also connects travelers from Sacramento or San Francisco with San Diego. It is synergies like these that caused ridership estimates to double when extensions were added to Sacramento and San Diego according to studies done by the

⁸⁷ Statewide Program EIR/EIS, Table S.6-1 Summary of Key Environmental Impacts and Benefits for System Alternatives, pages S-11 to S-16

Intercity High-Speed Rail Commission.⁸⁴ Similar results are detailed in a Ridership and Revenue study conducted for the Authority as part of their 2008 Business Plan.⁸⁸ In fact, the Commission's final report showed the project only having a net positive economic benefit to Californians if the extensions to Sacramento and San Diego were built.⁸⁹ The same synergies exist today.

The central problem with the Authority's incremental approach to funding and construction of the system is that benefits accrue mostly with completion of the entire system while environmental costs, as well as construction costs, accrue approximately proportional to miles of track constructed. For this reason, it is impossible to believe that a Merced to Fresno or even a Merced to San Fernando project could obtain an environmental clearance on its own. Merced to Fresno and the other segments encompassing the IOS can only achieve clearance as part of the statewide system that was compared to the "No Project Alternative" and the "Modal Alternative". Californians have no assurance that the statewide system, or even Phase 1 linking San Francisco to Los Angeles, will ever be built because the Authority has never acquired the tens or hundreds of billions of dollars necessary for their construction. Californians living in the Central Valley face an environmental catastrophe with no assurance of any benefits associated with high-speed train travel.

Years of delay and a lack of high-speed rail funds have left Californians facing an alternative worse than anything envisioned in the Statewide EIR if the Authority is allowed to start accessing bond funds to build in the Central Valley. The "No Project Alternative" will be realized when 2020 arrives, billions of dollars will have been spent destroying lives and property in the Central Valley, and the benefits of traveling by high-speed trains will not have been experienced by any Californians.

Mark R. Powell
March 2014

⁸⁸ CALIFORNIA HIGH-SPEED TRAIN PROJECT RIDERSHIP AND REVENUE FORECASTS, RIDERS AND REVENUE FOR HIGH-SPEED TRAIN FULL SYSTEM, YEAR 2030, page 11.
See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2008_SRC_RiderRevenue.pdf

⁸⁹ High Speed Rail Summary Report and Action Plan, Published by Intercity High-Speed Rail Commission December 13, 1996, Table 7.8 Total Discounted Costs and Economic Benefits (Year 2000-2050)

2014 Business Plan RECORD DETAIL

Record Date : 4/2/2014

Submission Date : 4/2/2014

Affiliation Type : Individual

Interest As : Individual

Submission Method : Website

First Name : Robert

Last Name : Allen

Business/Organization :

City : Livermore

County : Alameda

Zip Code : 94551

Stakeholder Comments/Issues : Don't squander any more money on Caltrain/HSR Blended Rail! Avoid those grade crossings!

Bourbonnais was an accident - on 79 mph track like Caltrain. Could a saboteur leave such a truck, or one laden with flammable or hazardous cargo, at a crossing in front of an HSR train? What if it were part of a co-ordinated attack like that of 9/11/01?

Allow no grade crossings of track used by HSR. Truncate HSR to the Bay Area at San Jose, with cross-platform transfers there to Caltrain and Capitol Corridor. BART is also planned (but un-funded) to there also.

Forget that "one-seat ride". Safety and Reliability are more important.

Draft Business Plan Comment

Type :

2014 Business Plan RECORD DETAIL

Record Date :	4/3/2014
Submission Date :	4/3/2014
Affiliation Type :	Individual
Interest As :	Individual
Submission Method :	Letter
First Name :	Michael
Last Name :	Brady
Business/Organization :	
City :	Menlo Park
County :	San Mateo
Zip Code :	94025
Stakeholder Comments/Issues :	Please see attached.
Draft Business Plan Comment Type :	
Attachments :	20140403081423241.pdf (786 kb)

COMMENTS REGARDING THE AUTHORITY 2014 BUSINESS PLAN

Your plan obviously has to comply within the law (Proposition 1A) and I would like to ask certain questions and ask you to respond as to how your business plan does meet the requirements of law.

WHICH BUSINESS PLAN ARE YOU RECOMMENDING?

You had your 2012 Business Plan. That was affected by Judge Kenny's August and November 2013 decisions throwing out your funding plan. Now you are in the Court of Appeal apparently trying to hang onto the 2012 plan and the 2011 funding plan; but you announced on television on January 15, during the Denham hearings in Washington D.C., that you were intending to comply with the Kenny order, meaning submission of a new funding plan, and presumably a new business plan along with it. And, you explained on January 15, what that new business plan would be.

But, then you filed various petitions which are now in the Court of Appeal in Sacramento. These sought to have upheld your 2011 funding plan and the related business plan, making no reference to what you announced you would be doing in the January 15 federal hearing and making no reference to your 2014 business plan. How do you explain all this? Just WHICH plan are you now advocating? The 2011-12 business plan or the 2014 plan? What will happen if the Court of Appeal affirms the Kenny decisions? Will you then be relying on the 2014 business plan or even a new one tailored to meet the demands of an affirmance of the Kenny rulings? This is all very confusing. The public is entitled to know what you will be doing.

NO ELECTRIFICATION; NO GENUINE HSR

The 2014 business plan does not call for a segment that will, from the outset, be electrified, suitable and ready for HSR train operations, and this is required under Proposition 1A. What is the reason for this? Dan Richard has said in the past, "if you want it electrified, that can be done." Why not with your 2014 plan? What is the cost of coming back, after conventional rail segment is built, and then modifying it to be electrified? Isn't this wasteful? What is your position as to why the first construction segment that you plan to build will NOT be electrified? Do you take the position that Proposition 1A allows you to build a PART of the usable segment that are selected (central valley to Palmdale) without electrifying it? What is the cost of the conventional rail segment that you plan to build and what WOULD be the cost if that same segment were electrified? Please answer these questions.

THE USABLE SEGMENT ISSUE

Proposition 1A requires the entire HSR system throughout California to be built in what are called USABLE SEGMENTS. Is it your position that your "first construction segment"

in the 2014 business plan is a USABLE SEGMENT as that term is defined in Proposition 1A? Or are you taking the position that your first construction segment is simply part of the larger "usable segment" that goes from the central valley to the Palmdale area?

UPDATED COST INFORMATION

We have not had an update in the "costs" unwrap since you published your "low" estimate of \$68 billion for "Phase I." Since that figure was announced, has there been an adjustment? What is the current cost estimate, low and high? And what about the "first construction segment" as you refer to it? The last time you provided information, this was to cost around \$6 billion. What is the current figure in your 2014 business plan? Has there been any increase since the \$6 billion cost was announced?

And, if your "usable segment" has changed to end in Palmdale, instead of the San Fernando Valley (station unknown), what is the current cost of that entire segment? Specifically, what is the cost of the TUNNELING OPERATION that must go through the Tehachapis? On March 27, at hearings before the Senate Transportation Committee, chaired by Senator DeSaulner, experts said that tunneling was extremely expensive and complex and was frequently underestimated, and that tunneling was often the MOST EXPENSIVE PART of an operation like yours. Please provide up to date estimates for the tunneling construction/planning costs.

PHASE II OF THE STATEWIDE SYSTEM

WHY do you ignore Phase II - the part that connects San Diego, the Inland Empire, San Bernardino, and Sacramento? After all, a substantial part of the state's population lives there, and they are being ignored, even though many voted for the project. None of your business plans ever talk about that Phase II. What is the CURRENT estimated construction cost for Phase II? Please explain.

OAKLAND AND ANAHEIM

Anaheim is supposed to be part of the system; indeed on March 27, experts announced that Anaheim station has MORE PASSENGERS than Union Station. Why was Anaheim removed from your last business plan? Where is it treated in your current business plan (2014)? Under Proposition 1A, Anaheim must be treated; it is part of Phase I; what is the cost of going from LA Union Station to Anaheim (construction)? Did you remove Anaheim in order to lower construction costs? Please explain your justification for doing this.

And what about poor Oakland!? They are totally ignored in your business plan, yet it is an integral part of Phase I. Please explain your justification for doing this.

ANCHORS AT EACH END

On March 27, experts testified at the DeSaulner hearing that a HSR project, to be feasible, should start with an "anchor" city and then move out; the experts recommended that the best thing to do would be to start in LA and move to Bakersfield. This would also accomplish a greater reduction in air pollution and auto congestion, since LA is the worst metropolitan area in the state for such phenomena. All of this goes to FEASIBILITY which you are required to prove. Why doesn't your business plan start EITHER in LA or SF, instead of the central valley? Indeed, what justification is there for starting in the central valley? Is this more feasible? Will this promote a greater chance of success and profit? Will the ridership be better if you start there? Please explain.

RIDERSHIP

When you compare your 2014 business plan with the 2012 plan, is the ridership estimate lower ending at Palmdale, rather than ending in the San Fernando Valley? Please give us the exact numbers concerning this important requirement of Proposition 1A where you must prove that the ridership for the usable segment that you select will be adequate to earn a profit for the system and avoid a federal, local, or state subsidy for operating costs. Also, please explain what the passenger does (in order to get to LA Union Station) once the passenger gets to Palmdale? We heard on March 27 at the DeSaulner hearing that the tracks from Palmdale to LA were built in 1876! What plans are there to update and what will the cost be? With a change of trains in Palmdale, will this have ANY negative effect on attractiveness of the trip and ridership estimates? When will your next ridership study be released? Also, please explain how a passenger GETS TO MERCED/MADERA to start the trip to Palmdale? Or, will almost all passengers be central valley residents? Do you contend that bay area passengers will take the bus to Merced to board the HSR train for Palmdale? What is the total travel time for such a bay area passenger to get to Union Station in LA? Do you believe that you can be competitive with the airlines ?

FARE ESTIMATES

It has been a long time since you announced what your fares would be (in the \$80 range, up from \$50). What is the CURRENT estimate for a one way trip from SF to LA? Please provide this information.

COMPLETION DATES

What is the current estimate for the DATE that Phase I will be completed as a genuine HSR system from SF to Anaheim?

What is the CURRENT date when Phase II will be completed and operating as a HSR system? Is it your position that the completion dates in Proposition 1A are not mandatory? Please explain.

TRIP TIME

Proposition 1A requires that the trip time for the passenger going from LA to SF be 2 hours 40 minutes. Your 2014 plan admits that the trip time will not meet that requirement, but will take 3 hours 8 minutes. How is this compliant with the mandatory provision of Proposition 1A on trip time? Was this trip time requirement an important element in the voters' approval of Proposition 1A? Indeed, wouldn't this be the most important of all the promises, since a passenger is always concerned with how long the trip will take? Do you take the position that all that you have to do to comply is prepare a computer simulation that indicates that the trip can be made/accomplished in less than 2 hours, 40 minutes? Under your current business plan, what will the speed of the train be coming down/descending from the Tehachapis? What will be the speed under your business plan for the HSR train going through the cities of Fresno and Bakersfield? Proposition 1A separately requires the trip from San Francisco to San Jose to be accomplished in 30 minutes? Will you be able to accomplish that under your 2014 business plan? Or will the time exceed that?

Are your speed calculations and time calculations from LA to SF based on terminating at 4th and King OR the Trans Bay Terminal? Where in the business plan is this clarified?

Will all HSR trains from San Jose to San Francisco, and from SF to SJ, be stopping at Millbrae/ SFO airport connection? Under your business plan what is the time in minutes for such a stop? What speed will the HSR train be travelling from SF to SJ and vice-versa [average speed sufficient]?

On March 27, at the DeSaulner Committee hearing, Lou Thompson of the Peer Review Group, and Professor Bibb indicated that in the REAL WORLD, it will be physically impossible for the trip to be made in 2 hours and 4 minutes; is this correct? Is the 2 hour, 40 minute time simply the product of a computer simulated DESIGN? In the real world, as explained by Thompson and Bibb, what will be the ACTUAL TRIP TIME?

HEADWAY

Proposition 1A requires the "headway" to be 12 HSR trains per hour, approximately six minutes apart. Does your business plan indicate that this will be accomplished? If not, how many HSR trains per hour will be accomplished?

Is the TBT, part of your system, being constructed NOW to accommodate 12 HSR trains per hour, in addition to the other trains/modes of transportation that it will be accommodating?

Does "headway" have a bearing on profitability? Where in the business plan do our discuss this? Will 12 trains per hour, loaded to reasonable capacity, provide more profit for the Authority than 6 trains per hour? Is there anything about the peninsula corridor and the "blended system" that you adopted in 2011-12 that adversely affects the headway requirements? On March 27, experts at the DeSaulner hearing said that the blended system on the SF peninsula creates unique complexities for HSR and Cal Train working together with potential conflicts and difficulties, with five systems, including UPRR, sharing two sets of tracks only. These experts said that this issue has to be studied much more extensively and that as ridership increases on Cal Train, the problem will worsen. Does your business plan further analyze this difficulty and how it will affect the headway and other issues? If not, when will you be doing such an analysis?

Does your business plan discuss the possibility that four sets of tracks will be necessary to accomplish the objectives of Proposition 1A and to alleviate the difficulties of "shared usage" on the peninsula?

On the subject of the peninsula and the blended system, which you have now adopted, why have you not, 6 years after Proposition 1A, presented a written contract (not a MOU) to UPRR, thereby obtaining their required consent to your operational and construction plans for the peninsula (having in mind that you view Cal Train as PART OF THE HSR SYSTEM, which they must be to be eligible for Proposition 1A funds)? UPRR has pointedly brought this up that they are waiting for such a contract. Are you aware that in 2010, UPRR gave you a detailed 4 page letter outlining the considerations which you must analyze to take account of their freight operations and safety concerns? Does your business plan address the safety concerns of operating freight systems alongside HSR trains?

What about the grade crossing issue? Does your current business plan simply call for most crossings to be "at grade?" or do you have plans for an elevated viaduct on the peninsula? Please clarify. What about the deaths that occur now at peninsula grade crossings? What measures does your business plan advocate for eliminating those?

THE TRANSBAY TERMINAL AND 4TH AND KING

Your current business plan has the train going to the and King, NOT to the TBT. Doesn't Proposition 1A require the SF to LA corridor to originate from the TBT and GO TO the TBT? What is your justification in your business plan for saying that 4th and King will be the destination/starting point in SF?

What is the current cost of tunneling from 4th and King to the TBT? Do you have the funds in hand or secured to accomplish that? Will tunneling still be the method for getting to the TBT? If not, please explain.

RAIL MODERNIZATION

Your business plan (2014) mentions rail modernization. I appreciate that the \$950 million part of Proposition 1A can be used for that. But, do you contend that the rest of Proposition 1A, the \$9 billion part, can be spent for what you call rail modernization, as distinguished from being used exclusively to build a genuine, electrified HSR train system from the outset? Please explain.

PTC AND C-BOSS

Your business plan envisions that Cal Train's operations on the peninsula will eventually be "part of " the HSR system itself , and that therefore Cal Train is eligible to receive Proposition 1A funds for its electrification system.

Are you aware that the C-Boss control/safety system that Cal Train is currently installing on the peninsula is INCOMPATIBLE with the PTC system that HSR will be using? Please explain this.

CONCLUSION

The issues above are important in assessing the FEASIBILITY of your project and the business plan. We look forward to having you address these. Please do not ignore them; if our choose NOT to respond, then say so and acknowledge that you have reviewed and considered these issues. But, if you fail to address them, please explain why you have done so. We do not view these as being irrelevant.

Mike Brady



2014 Business Plan RECORD DETAIL

Record Date :	4/3/2014
Submission Date :	4/3/2014
Affiliation Type :	Individual
Interest As :	Businesses And Organizations
Submission Method :	Letter
First Name :	CCHSRA
Last Name :	Organization
Business/Organization :	
City :	
County :	
Zip Code :	00000
Stakeholder Comments/Issues :	Please see attached letter. Hard copy to follow in mail.
Draft Business Plan Comment Type :	
Attachments :	2014-04-02-Business Plan Public Notice and Hearing 2.pdf (137 kb)



April 2, 2014

California High Speed Rail Authority
Chairman Dan Richard and Board Members
Attn: Draft 2014 Business Plan
770 L Street, Suite 800
Sacramento, California 95814

Subject: Improper Public Notice and Public Hearing Procedure for the 2014 Draft Business Plan

Dear Chairman Richard and Board Members:

According to California Public Utilities Code Section 185033, the California High-Speed Rail Authority is required to do the following:

1. **Prepare** a “business plan,” which includes publishing a draft at least 60 days before final publication so that the public can review it and submit comments to the Authority about it. The Authority is required to “take into consideration comments from the public hearing and written comments” before publishing the final business plan.
2. **Submit** the draft to four committees of the California State Legislature – the committee in each house that deals with transportation and the committee in each house that deals with the budget.
 - Senate Committee on Transportation and Housing
 - Assembly Committee on Transportation
 - Senate Committee on Budget and Fiscal Review
 - Assembly Committee on Budget

If these committees hold hearings on the draft, the Authority is required to take into consideration the content of those hearings before publishing the final business plan.

3. **Publish** the final business plan by May 1, 2014 (and then every two years thereafter).
4. **Adopt** the plan through a vote of the California High-Speed Rail Authority board at a regularly scheduled hearing, with at least one public hearing on the plan.

Did the Authority Hold a Legitimate Public Hearing on the Plan? The California High-Speed Rail Authority posted on its web site a February 7, 2014 press release entitled “High-Speed Rail Authority Releases Draft 2014 Business Plan: Updates 2012 Business Plan.” It says “To ensure that the public

has an opportunity to respond, the Authority is providing five methods for submitting comments on this draft plan.” Here are the five listed methods:

1. Online comment form through the Draft 2014 Business Plan website at:
http://www.hsr.ca.gov/About/Business_Plans/Draft_2014_Business_Plan.html
2. By email at 2014businessplancomments@hsr.ca.gov
3. By U.S. mail to the Authority:

California High-Speed Rail Authority
Attn: 2014 Business Plan
770 L Street, Suite 800, Sacramento, CA 95814
4. Voice mail comment at [916-384-9516](tel:916-384-9516).
5. Provide public comment at the Authority’s Board of Directors Meeting on February 11, March 11 and April 10.

The California High-Speed Rail Authority apparently considers the fifth method for public comment listed on the February 7, 2014 press release – “Provide public comment at the Authority’s Board of Directors Meeting on February 11, March 11 and April 10” – to fulfill its legal obligation for “at least one public hearing on the plan.” We don’t agree. We believe this method violates the intent of the state legislature, if not the law. Here is evidence that the Authority has not formally held a public hearing:

- The Authority did not provide the public with a notice indicating a “public hearing on the plan.” We do not consider its February 7, 2014 press release to be a legitimate public hearing notice, which we would expect to be posted sometime between 72 hours and – reasonably at the earliest – ten days before the hearing. That notice should include, at a minimum, the date, time, and place of the hearing, the identity of the hearing body, an explanation of the matter to be considered, and an invitation for the public to address the body about the matter.

Based on a comment of the Authority CEO during the February 11, 2014, meeting, the Authority considers the release of the Draft 2014 Business Plan on February 7 as what “starts the statutorily required 60-day public comment period.” But there is also a public hearing required in California Public Utilities Code Section 185033(b)(2).

- The Authority did not include anything on its February 11, 2014 and March 11, 2014 board meeting agendas indicating a public hearing on the 2014 Draft Business Plan.
- The Authority has not provided the public with evidence in its board meeting minutes that a public hearing was held on the 2014 Draft Business Plan. As seen in the approved minutes of the February 11, 2014 Authority board meeting, meeting minutes typically report public comments with this standard statement: “An opportunity was made for public comment. Speakers commented on a variety of topics.” As a result, meeting minutes do not indicate the Authority held a “public hearing on the plan.”

- Oral comments comprising the “public hearing” have been minimal. Only five people have spoken during public comment about the 2014 Draft Business Plan, according to transcripts of the February 11, 2014 and March 11, 2014 board meetings posted on the Authority web site. Five speakers commented on the plan at the February 11 meeting, and one of those five speakers was also the sole commenter on the plan at the March 11 board meeting. Those five speakers regularly address the Authority during public comment on a variety of issues.

This is rather paltry public comment on the business plan for the most expensive public works project in American history – a highly controversial project with national and international significance. The Authority board needs to consider whether this scant oral testimony reflects deficiencies in the notice for a “public hearing on the plan.”

- Staff indicated at the February 11, 2014 and March 11, 2014 board meetings that Authority staff would summarize the oral (and written) comments for the board and categorize comments to avoid redundancy. This concerned one speaker:

MR. OLIVEIRA: Frank Oliveira. I'm with Citizens for California High Speed Rail Accountability. I spoke before you many times. Okay. I'm going to talk about some very specific things pertaining to the business plan, okay, and other documents and meetings that I have been to. One of the things that was referenced in the documents I'm reading is that the public comment pertaining to the business plan is going to be summarized for the Board. Okay. Who's going to do the summarizing, and is that appropriate, if that's in a document. So if I make a comment to the Board, is the Board going to read it, or will it be summarized, kind of categorized, you know, a 'yay' or 'nay' type of thing? That's a little bit confusing.

During board discussion of the agenda item later in the meeting entitled “Presentation of the Draft 2014 Business Plan,” the Authority CEO made these remarks:

All – each and every comment that is received will be reviewed. Each and every comments (*sic*) will be made available to the Board for their review. When there was discussion in the memo and there was a question about what it will mean for staff to summarize for the Board, what that will be is really sorting comments in order for the Board to look at them and understand, for instance, that we got -- 72 percent of the comments were relating to one particular area of the reports. So it's really about the analysis of comments so that the Board can understand where the focus has been, but the full comments will be made available to the Board so that they can consider them.

Where we go from here. So the plan is now out for that 60-day comment period. We have already received some comments. I think we got the first half dozen or so over the weekend, and we'll continue to take them in on a rolling basis and analyze them, look at them, and recommend changes where we think it's appropriate to do. The plan is that at the April 10th board meeting, we would come back to the Board with a proposal for – with recommended changes and hear from the Board its comments about what needs to be changed in order to adopt then a final 2014 business plan and then submit that to the legislature as required on May 1st on schedule.

Authority Board member Perez Estolano then made a general inquiry about what the Authority was doing to notify agencies (and presumably, the public) about the request for comments:

MS. PEREZ-ESTOLANO: What is the process in terms of the outreach, just getting this information that the updated plan is available for comment, for review? Are we sending it out to, like, transportation agencies, the planning MPOs? How are we doing that, or I'm not sure if we have a responsibility, but I think we have a duty to certainly try to get that out.

MR. MORALES: We have various ways of doing it. One is we issued a press release when we put it out. It's on the very front page of our website, prominently displayed, certainly. So when anyone goes to the website, they'll see it right there. We do work directly with our stakeholders to make them aware of it and invite their comment. We're doing that also through our regional directors, taking responsibility for dealing directly with the people within their areas. We expect we'll get – we did certainly the last time – got a significant number of comments from around the state and would expect the same this time.

Notice of a public hearing was not mentioned as part of that “outreach.”

- During discussion of the agenda item entitled “Update on the Draft 2014 Business Plan” at the March 11 board meeting, staff reported receiving 111 total comments. The Authority CEO made these remarks during the March 11 board discussion:

CHIEF EXECUTIVE OFFICER MORALES: Very clearly, Mr. Chairman, I just wanted to update the Board but also remind the public that we are still in the public comment period on the draft plan. As of this morning, we had received 110 comments. With Mr. Dayton's, we're up to 111 now. We are in the process of reviewing those, reminding people again they have several different ways they can submit comments, through the website, which is the way the majority of comments have been submitted. Also through the mail and phone and by speaking here at the Board meeting. So we are moving forward with that again receiving a good number of comments. Some very specific, some suitable for discussion of public some not. But we're moving ahead.

As occurred at the February 11, 2014 meeting, Authority Board member Perez Estolano followed-up with questions:

BOARD MEMBER PEREZ-ESTOLANO: I just have a quick question. Jeff, are we going to receive copies of those comments? At the end of that 60 days period, we'll receive them all?

CHIEF EXECUTIVE OFFICER MORALES: What we will have available to the Board and the public is a full cataloguing of the comments sorted. What we do is, among other things, try to group them together. So if we have 15 comments all in the

same area, we note that. And so that you will also get a sense of where the preponderance of issues were or comments or questions.

As of March 31, 2014, the Authority has not provided public access to these comments or any subsequent comments, either in raw form or in a summarized and categorized form.

- The Authority board is scheduled on the April 10 meeting agenda for “Approval of the Final 2014 Business Plan” for submission to the four committees of the California State Legislature cited in law. Comments made during public comment at this meeting obviously will not be part of the categorized summary provided to the Authority board and the public.
- Based on the remarks of the Authority CEO at the February 11, 2014 meeting, Authority board members will make comments about what needs to be changed at the April 10 meeting. It is unclear to the public which of these actions the board members will take:
 1. Use parliamentary procedure to make specific amendments to language in the Draft 2014 Business Plan
 2. Use parliamentary procedure to make specific amendments to language in a Final 2014 Business Plan provided to them at the meeting
 3. Make general comments about the Draft 2014 Business Plan for the Authority staff to address in a Final 2014 Business Plan subsequently submitted to the legislature by the Authority without public review.
 4. Make general comments about a Final 2014 Business Plan provided to them at the meeting for the Authority staff to address in an amended Final 2014 Business Plan subsequently submitted to the legislature by the Authority without public review.

The deficiency of public notice and lack of a formal public hearing is especially disturbing because the California State Legislature has not vigorously exercised the provision in California Public Utilities Code Section 185033 that encourages the four committees to hold hearings on the draft and require the Authority to take into consideration the content of those hearings before publishing the final business plan.

Only one informational hearing has been held regarding the 2014 Draft Business Plan in the California State Legislature during the 60-day comment period. On March 27, 2014, the chairman of the Senate Transportation and Housing Committee held an “Informational Hearing on World Class Passenger Rail System in California: Evaluating High Speed Rail's Potential for Success.” This hearing included a panel of experts discussing the 2014 Draft Business Plan.

Hearing	Date	Documents
Senate Transportation and Housing Committee: Informational Hearing: World Class Passenger Rail System in California: Evaluating High Speed Rail's Potential for Success	March 27, 2014	<p>Agenda: http://stran.senate.ca.gov/sites/stran.senate.ca.gov/files/Agenda.pdf</p> <p>Background Report: http://stran.senate.ca.gov/sites/stran.senate.ca.gov/files/BackgroundPaper3-27-14_Final_amended.pdf</p> <p>Legislative Analyst's Report: http://www.lao.ca.gov/handouts/transportation/2014/Funding-HSRA-032714.pdf</p> <p>Video of Hearing: http://calchannel.granicus.com/MediaPlayer.php?view_id=7&clip_id=1967</p>

The chairman was the only legislator to attend the hearing. It's uncertain if the Authority will follow its legal mandate to take hearing testimony into consideration, as representatives of the California High-Speed Rail Authority were seen leaving the committee room before the conclusion of the hearing.

A subcommittee of the Assembly Budget Committee held a hearing on April 2, 2014 regarding transportation spending. It included eight "issues" regarding California High-Speed Rail, and one of those issues was the 2014 Draft Business Plan.

Hearing	Date	Documents
Assembly Budget Committee - Subcommittee No. 3 - Resources And Transportation	April 2, 2014	<p>Agenda and Staff Report: http://abgt.assembly.ca.gov/sites/abgt.assembly.ca.gov/files/Sub%203-%20April%202%20Agenda.pdf</p> <p>Audio Recording: http://assembly.ca.gov/listen/447-audio</p>

Little of substance was said about the 2014 Draft Business Plan in the staff report or during the committee hearing. During public comment after discussion of eight issues related to California High-Speed Rail, one person specifically criticized aspects of it.

Meanwhile, the Assembly Committee on Transportation and the Senate Committee on Budget and Fiscal Review have not held any hearings on the 2014 Draft Business Plan.

It seems that earlier business plans were evaluated much more thoroughly:

Hearing	Date	Documents
Senate Transportation and Housing Committee Informational Hearing : Review of the High Speed Rail Authority's Business Plan	October 23, 2008	Agenda: http://stran.senate.ca.gov/sites/stran.senate.ca.gov/files/10-23-08Agenda.doc Background Report: http://stran.senate.ca.gov/sites/stran.senate.ca.gov/files/10-23-08BackgroundPaper.doc
Assembly Transportation Committee Informational Hearing - High-Speed Rail Authority 2009 Business Plan	January 11, 2010	Agenda: http://atrn.assembly.ca.gov/sites/atrn.assembly.ca.gov/files/hearings/011110Agenda.pdf Background Report: http://atrn.assembly.ca.gov/sites/atrn.assembly.ca.gov/files/hearings/011110background.pdf
Joint Legislative Informational Hearing of the Senate Transportation and Housing Committee and Senate Budget and Fiscal Review Sub-Committee No. 2 on Resources, Environmental Protection, Energy and Transportation: California High-Speed Rail Authority's 2009 Business Plan	January 19, 2010	http://www.cc-hsr.org/assets/pdf/Senate-Overview-1-10.pdf (not legislative link)
Budget Subcommittee No. 3 on Resources and Transportation - High Speed Rail Authority Business Plan	November 15, 2011 in Palo Alto	Agenda: http://abgt.assembly.ca.gov/sites/abgt.assembly.ca.gov/files/hearings/Nov%2015%20High%20Speed%20Rail%20Oversight%20Hearing%20Agenda.pdf
Assembly Transportation Committee Oversight Hearing - High-Speed Rail Authority: Draft Business Plan and Funding Plan	November 29, 2011	Agenda: http://atrn.assembly.ca.gov/sites/atrn.assembly.ca.gov/files/hearings/11-29-11%20High-Speed%20Rail%202012%20Business%20Plan%20hearing%20Agenda.pdf Background Report: http://atrn.assembly.ca.gov/sites/atrn.assembly.ca.gov/files/hearings/11-29-11%20High-Speed%20Rail%202012%20Draft%20Business%20Plan%20Background.pdf

Joint Informational Hearing of the Senate Transportation and Housing Committee and Select Committee on High-Speed Rail: Review of the Draft High-Speed Rail Authority's Business Plan	December 5, 2011	Agenda: http://stran.senate.ca.gov/sites/stran.senate.ca.gov/files/12-5-11FinalAgenda.pdf Background Report: http://stran.senate.ca.gov/sites/stran.senate.ca.gov/files/12-5-11BackgroundPaper.pdf
Assembly Transportation Committee Informational Hearing - High-Speed Rail Authority: Revised 2012 Business Plan	April 30, 2012	Agenda: http://atrn.assembly.ca.gov/sites/atrn.assembly.ca.gov/files/hearings/April%2030%20agenda.pdf Background Report: http://atrn.assembly.ca.gov/sites/atrn.assembly.ca.gov/files/hearings/HSR%20April%2030%20background.pdf
Senate Transportation and Housing Committee and Senate Select Committee on High-Speed Rail Senate Budget and Fiscal Review, Subcommittee No. 2 on Resources, Environmental Protection, Energy and Transportation: Joint Informational Hearing on the California High-Speed Rail Project : High-Speed Rail Authority Revised 2012 Business Plan	May 15, 2012	Agenda: http://stran.senate.ca.gov/sites/stran.senate.ca.gov/files/5-15-12%20Agenda.pdf Background Report: http://stran.senate.ca.gov/sites/stran.senate.ca.gov/files/High-Speed%20Rail%20Authority,%20Revised%202012%20Business%20Plan,%20Final%20background%20report.pdf
Assembly Transportation Committee Oversight Hearing - California High Speed Rail Authority: High-Speed Rail Project Status Update	February 25, 2013	Agenda: http://atrn.assembly.ca.gov/sites/atrn.assembly.ca.gov/files/hearings/2.25.13%20Agenda%20doc.pdf Background Report: http://atrn.assembly.ca.gov/sites/atrn.assembly.ca.gov/files/hearings/HSR%20Hearing%20Back

To avoid a legal challenge, the California High-Speed Rail Authority needs to comply with California Public Utilities Code Section 185033(b)(2). It needs to provide adequate public notice of a legitimate public hearing as a stand-alone meeting agenda item for the public to comment before the board on the Authority's 2014 Draft Business Plan. The public hearing needs to be acknowledged in subsequently approved minutes of the meeting. The public needs a clear idea of public comments and how the Authority considered these comments and incorporated into the Final 2014 Business Plan. The public needs a clear idea of how the Authority considered and incorporated content of the sole legislative committee hearing.

We appreciate your consideration in this matter. If you have any questions or comments please do not hesitate to contact us at cchsrorg@gmail.com.

Sincerely,

A handwritten signature in dark ink, appearing to read "Aaron Fukuda", with a long horizontal stroke extending to the right.

Aaron Fukuda
Citizens for California High Speed Rail Accountability

cc:

Assemblymember Skinner
Assemblymember Gorell
Assemblymember Lowenthal
Assemblymember Linder
Assemblymember Patterson
Assemblymember Salas
Senator Leno
Senator Nielsen
Senator DeSaulnier
Senator Gaines
Senator Vidak

2014 Business Plan RECORD DETAIL

Record Date : 4/3/2014
Submission Date : 4/3/2014
Affiliation Type : Individual
Interest As : Businesses And Organizations
Submission Method : Letter
First Name : Kathy
Last Name : Hamilton
Business/Organization :
City :
County :
Zip Code : 00000
Stakeholder Comments/Issues : cannot read message
Draft Business Plan Comment Type :
Attachments : 2014 Draft Business Plan comments.pdf (116 kb)

April 2, 2014

Comments for the 2014 Draft Business Plan
By Kathy Hamilton, Menlo Park, Ca.

Design:

I believe the decentralized way the business plan it was set up with tons of files outside the main business plan is inconvenient and perhaps done so for that very reason. I believe it is not easy to read for the every day person and the Legislature who does not follow the project on a regular basis makes it tough to understand what's going on.

While I have not been pleased with management teams on the Rail Authority Board in the past, I will tell you that former plans were easier to read and prepared in order to be user friendly. This newest business plan is anything but and may in fact be designed purposely to hide information or make it difficult for the public to understand.

You also have the habit of highlighting parts of reports that are favorable that make it appear that their comments are wholly positive such as the GAO report, the Peer Review Reports but both of those comments were not favorable. Here's an example: Example: Lou Thompson's letter, written in the summer of 2013, was placed at the very end of the business plan, in fact in back of Will Kempton's old comment letter written after the deal was struck for the bookends money. Thompson's plan did not skewer the plan, but he did make a few critical points. Why wasn't Thompson's letter before Kempton's since it's most relevant and certainly most current?

When you talk about costs in the future possibly being different that what is stated today, don't you mean higher? No one would care if they were lower, everybody would be happy. Why be so cagey in your wording.

Risks:

Your risks are completely underplayed. You don't even specifically mention the lawsuits, merely blowing them off as regular business on mega projects. That's extremely dishonest. It has been the practice of previous business plans to put the current lawsuits in the business plans. Today's lawsuits aren't nuisance lawsuits, they threaten the very life of the project according to your legal briefs.

Specific Railroad Risk:

The Business Plan makes the statement the risk of not having master agreements could delay the project. This is the understatement of the universe. Actually it could end the project since the railroads are capable of delaying the project until it can't be done at all.

You should not be able to go ahead and start the smallest area of the Central Valley without Master Agreements signed. I believe the FRA Funding agreement says you have to have these agreements in place unless they can change that at this late stage of the game. The agreements say if there are any exceptions to that they must be declared early in the project life. Certainly you wouldn't risk California's bond money, since you are obligating California funds with every dime you spend on federal funds, without having the project agreements in place.

For instance Union Pacific has told the Authority that they are very concerned about the blended plan. They alluded to this in the validation suit September 2013,

http://transdef.org/HSR/Validation_assets/Union%20Pacific.pdf

They alluded to this April 23, 2010 in their letter about the Draft business plan from the Bay area to the Central Valley. It appears that the HSR Authority has ignored Union Pacific's comments that "no part of the high-speed rail project can be on or above (except for

overpasses) on Union Pacific's ROW in any location. The entire letter is found here. http://www.calhsr.com/wp-content/uploads/2010/05/04_23_2010_Union_Pacific_Letter.pdf

The most recent example of dissatisfaction is the issue with electromagnetic fields. January 31, 2014 jointly Union Pacific Railroad and BNSF filed a complaint with the PUC.

https://www.pge.com/regulation/High-SpeedRailElectricSafetyOIR/Pleadings/Joint-BU/2014/High-SpeedRailElectricSafetyOIR_Plea_Joint-BU_20140131_295470.pdf

In it they make this statement about the project.

The California High-Speed Train Project ("CHSTP") is a project that has been defined by its uncertainty: uncertainty about when construction will start, how it will be paid for,¹ where it will run, and how it will achieve its statutory performance requirements. This proceeding is adding to the list of uncertainties and creating the probability that the project will cause unreasonable safety risks and conflicts with other railroad systems.

"[T]here is no railroad in operation in the U.S. that utilizes the new technologies that will be employed on the California High Speed Rail system."²

There are other comments made in the same document about dedicated vs. shared tracks:

Contrary to its petition, the CHSRA represented to all parties at the first scheduled workshop that it only sought to develop rules for those segments of its plan where high-speed trains will operate over a dedicated right-of-way. The CHSRA claimed that those segments where the CHSTP will share track with other passenger or freight trains, are not covered by the proposed rules. Despite these representations, the CHSRA has not formally amended its petition.

Bottom line, the Railroads are not ready for master agreements. They aren't ready for an electrification agreement either. Marian Lee, from Caltrain said at an April 1, 2014 Menlo Park City Council Meeting that they were in talks with Union Pacific and she believed it would be 3-4 months until they had resolution, but before the Electrification EIR was certified. Not so sure about that timing and the closer you get to the project implementation dates, surely the more expensive it will get because they have you over a barrel.

It appears that Union Pacific Railroad is not interested in the blended plan at all and before you spend one dime of taxpayers money on the Caltrain corridor you absolutely must have master agreements which include the San Francisco to San Jose corridor. It is irresponsible for you not to have this in place. If you obligate the state for some enormous amounts of money without getting the Legislature's approval since they are the only body who can authorize payment, the agency will be in hot water.

Capital funds and Operating and Maintenance Costs:

As indicated in the Judge Kenny trial, there is not enough money to complete the stated IOS in the business plan and that was one reason the court ruled against the High-Speed Rail Authority. The other was lack of completion of environmental work. That is very specifically indicated in Prop 1A and the enabling legislation, AB 3034.

Because the Governor decided to file an appeal, the Authority has not changed it's business plan nor funding plan to comply with the law. In a Senate Transportation Committee meeting held on March 27th, Senator DeSaulnier noted that he did not think what the judge said

and the business plan matched. He said suffice it to say he was skeptical of it.

There is no money, the Authority shows a gap of 20 billion dollars. I have written a series of articles on the business plan so I attach this article, which is my comments.

<http://calwatchdog.com/2014/03/05/high-speed-rail-where-the-money/>

Loan programs are not allowed except for the \$9.95 billion in bond funds.. We were supposed to receive \$3 billion a year from the feds in free grant funds. Adding more state debt was not in the plan when it came out in 2008.

Plus, the high-speed rail authority is not approved for any loans and the Superior Court judge did not allow for “maybe” deliveries on money so unless you have the dates you are expecting to receive the money they don’t count.

Professor William Ibbs, UC Berkeley engineering gave testimony in the March 27, 2014 Senate Transportation Hearing, He suggests that not only should the Authority provide an analysis of different capital funding scenarios, they should also provide different scenario’s on O & M. The Professor also revealed that “Most rail systems in the US, collect only about 2/3 of their operating cost from the fare box. If we have that kind of experience on this project, it’s going to eat future generation alive, it’s going to eat our grandchildren’s wallets alive. “ His testimony can be found at:

<http://youtu.be/pHvBZo8JW7Q>

The LAO also did an analysis of the funding aspects of the project in this document:

<http://www.lao.ca.gov/reports/2014/budget/transportation/transportation-030614.pdf> See pages 10-16

Financial Options by the Federal Government.

Currently there are three existing programs for which the HSRA program might be able to get some funding but certainly not enough. And loans, well they are not allowed beyond the \$9.95 billion allocated in the Prop 1A bond measure.

What else does the high-speed rail Authority have that proves that if they begin building the very first high-speed rail project, that the segment will not be stranded?

Railroad Rehabilitation and Improvement Financing [RRIF](#) administered by the Federal Railroad Administration; The RRIF program makes only loans, **mostly to freight railroads**, though loans have been made to Amtrak or other rail station projects. The total authorization of the RRIF program is \$35 billion, of which \$7 billion is restricted to smaller freight railroads, and a total of \$15 billion has been committed. This is normally done on commercial terms and is a loan. Reviewing the list of recipients, the loans are in the millions, not billions.

According to William Grindley, finance expert regarding High-Speed Rail, RRIF is a \$28 Billion dollar federal credit program that public entities may access for passenger rail-related capital investment.¹ The funding may be used to acquire, improve, or rehabilitate intermodal or rail equipment or facilities, including track, components of track, bridges, yards, buildings and shops; refinance outstanding debt incurred for the purposes listed above; and develop or establish new intermodal or railroad facilities.

The Authority's problem with using RRIF is that it is a loan program that requires debt servicing. AB3034 limited borrowing for high-speed rail to no more than \$9 Billion, complemented Prop1A's

proviso to voters of “No new taxes” to fund the construction or operation of the railroad. Borrowing more is prohibited, even at the low rates paid by the Federal Government.² RRIF cannot be used to supplement the available \$6 Billion build the IOS.

The [TIFIA](#) program, administered by the Federal Highway Administration also makes loans or guarantees loans for a part of the cost of a project, **mostly for highway projects**, though the program could extend to rail (the Transbay project in San Francisco received a \$171 million loan). TIFIA loans generally are less than \$1 billion, though the largest was \$1.6 billion for the replacement for the Tappan Zee Bridge in New York.

The Transportation Investment Generating Economic Recovery [TIGER](#) administered by the US DOT is a grant program. Funding has \$600 million in total to award this year. One of the criteria for TIGER grants is matching funding by other agencies. TIGER grants ranged between \$1 million and slightly over \$20 million per project in 2013, and are widely distributed across all states.

Cap -and-Trade as a funding source:

Cap and Trade dollars are a real problem since the train will not be operational until 2022 at the earliest that is if they found the \$20-25 billion gap. AB 32 requires reductions to 1990 levels by 2020 so it's therefore impossible for you to comply. How in the world will you buy enough credits to overcome construction damages to the Central Valley. So you're proposing that you take money from the auction and turn around and buy credits with it. That makes no sense other than it's a scam to justify going after cap-and-trade auction proceeds. That's not exactly what was envisioned. There are far more deserving programs that can have an immediate impact on GHG

emissions. It is said in the LAO reports that you will not be in a GHG reduction position for 20-30 years and that's if the ridership materializes.

Where is your cost/benefit analysis regarding the planting of all these trees in the Central Valley. There has to be an analysis that shows you mitigated the GHG emissions in order for you to claim that you have neutralized such damage.

Here is a group of documents just released, which proves why you cannot lawfully use cap-and-trade.

<http://www.scribd.com/doc/215761608/Inappropriate-Use-of-Cap-and-Trade>

The LAO asks that the Legislature slow down and develop standards so the state will have some immunity in the courts to the challenge that's being heard on appeal that says the credits are really taxes in disguise. Without standards, all you will show by funding this rail program is indeed it's a kitty for the Governor to spend as he sees fit.

Here is just one of the documents that the LAO published recently about Cap-and-Trade.

<http://www.lao.ca.gov/reports/2014/budget/transportation/transportation-030614.pdf> See pages 10-16

Even if the Senate approved the budget to give you \$250 million for this coming budget year and agrees to 33% of future years, no one has any idea of how much the cap-and-trade credits will actually be. So you'd have 33% of an unknown number. This was confirmed as a problem by Peer Review chairman, Lou Thompson as well as the LAO office in the March 27, 2014 Senate Transportation Committee.

By the way, let's see if you go approximately 87 miles with \$6 billion, which is the number that both William Warren and William Grindley estimate and is also in the Bakersfield comments to the STB and you

have 213 miles left to get to the San Fernando Valley to an unknown station, how long will it take to get to the San Fernando Valley. You do the math.

The LAO estimates you need \$4 billion a year to make the start of 2022 so you are taking California and US tax dollars to start something you know you can't finish. See the LAO comments at the March 27th meeting. <https://www.youtube.com/watch?v=1qwhoM9hcNc>

Also divulged at the Senate Transportation Meeting on March 27th, the Governor's wants the \$400 million he took from cap-and-trade to go directly to high-speed rail. That's not happening, it belongs with the Cap-and-Trade program.

The Authority seems to be in a chicken vs. egg situation with private investors. You need the money but they don't want to stick their neck out unless you prove the first usable segment can be profitable but you can't build it without their money.

Paul Dyson of the Train Riders Association of California. <http://youtu.be/mUvYGzdN5BQ> said that the project should have started from LA Union Station to Bakersfield, it would close the transportation gap, requiring bus rides and it would offer a big box store (using the example of what shopping centers do) or anchor location to make the program successful. If you were redesigning the program today and had the money to do that, I'm sure that would have been the preference. It has the ridership and the gap would be closed. That would check the box for independent utility surely and it would have a shot at ridership required to make it profitable. Senator Lowenthal wanted this. But you couldn't do it because the Rail Authority lacked the time to finish the environmental work and you didn't have the money. All you could afford with both time and money was the central valley. That segment will attract no one and the likelihood of finishing it to the San Fernando Valley is

impossible unless the federal government comes up with loans.

I believe that the spending of federal dollars obligates state dollars since the Prop 1A funds are frozen. By not following the laws of the state, you are putting at risk billions of state dollars since you may have to pay back federal dollars from other needy transit programs but more importantly you are taking away people's livelihoods, homes, businesses, dairies and farms because you want to spend \$3 billion dollars of federal money.

Here is an excerpt from Senator Lowenthal about the use of state funds in the form of cap-and-trade dollars and state funds.

In a public Senate Meeting, May 15, 2012, Senator Lowenthal asked then Peer Review Member, John Chauker, a telling question about Cap-and-Trade:

“ If the federal government doesn't come up with more funds and if cap and trade funds are used as a backstop then the state will effectively pay \$17 billion and the feds will pay \$3 billion to get an operable segment.” Lowenthal continues, “the legislature would no longer be looking at the voter promise of a public/private partnership, we could be looking at “ fully funded state project out of the general fund. Senator Lowenthal asked John Chalker, then peer review group member, “Does that seem unfair? Chalker answered, "Frankly, yes."

International Union of Railways found:

International Union of Railways (UIR) peer review- found here. http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2014_drft_Service_Planning.pdf For their recommendations see: <http://www.cahsrprg.com/final-docs-7-9-13-meeting/o&m-costs-uic-peer-review-pmt-response-matrix-130624.pdf>

While they did offer some good input to the Authority they were concerned about the speed. There had been deaths in China and other areas in Europe due to speed and countries had been lowering

their speed rather than increasing it.

Note number 19

19

The design of the project at the speed of proven technology (320 Km/h) or at lower speed should also be assessed in terms of ridership forecasts, capital costs and O&M costs.

Page 13

UIC is saying look at proven technology and assess what would happen with ridership forecasts, capital costs and Operating and Maintenance if you did so.

The word decrease means, slow the train down, if they did as the UIC recommended, it would reduce costs. The Authority said basically, no we are not going to consider it because the project is driven by Prop 1A requirements. Note: Whether it's unrealistic or not, we can't change it. The answer has to be what Prop 1A says.

Californians Advocating Responsible Rail Design (CARRD), Elizabeth Alexis, co-founder, has done an analysis of this plan. Elizabeth has a specialty in the subject of econometrics. I agree with her comments:

Things that CARRD found interesting about the UIR report and made comments on the items discussed within it:

It is a LOT more expensive to run trains at 220 mph than 186 mph (300 kph). There is a lot more wear and tear on the trains and the infrastructure. Train maintenance costs are at least **20% higher**, track maintenance costs are at least **40% higher** and energy use is between **10-30%** higher, depending on topography. This validates the Peer Review group's concerns about the Authority's comparison of costs to other rail lines that operate at slower speeds than the Authority's planned speed.

“While trying to stay clear of the landmine called “ridership forecasts”, the UIC hints strongly that the Authority is overstating its ability to pack each train and hence underestimating the costs per passenger. The Authority does not take the hint. Even if their ridership forecasts are accurate in terms of demand for train service, actual results are likely to fall well short of forecasts. The French try the hardest to pack each and every train. They get them about 70% full. The Germans have prioritized frequent and consistent service. Their trains are about 50% full. □

The Authority is assuming the frequency and consistency of the Germans with passenger load factors that make the French seem like amateurs. Outside of a couple of limited examples in Asia where the population density is so high that there are no tradeoffs between schedule and operating efficiency, there are always tradeoffs. The current route, with multiple stops and an effort to serve long distance commuters, is especially susceptible to these types of real world issues. If the Authority is lucky, forecasted load factors are only twice what actual ones will be as the Authority is assuming a German like approach to scheduling.

They say there seems to be “still underestimating the cost of maintaining its infrastructure and assuming that it can operate with perfect efficiency.” .

<http://www.calhsr.com/uncategorized/european-experts-weigh-in-on-authoritys-operating-cost-model/>

Program Cost Estimates by corridor

In former plans, you broke out each corridor and showed the estimated costs. Those costs should be visible.

You show higher costs in the Central Valley segments in the November 15, 2013 update to the Legislature

http://www.hsr.ca.gov/docs/about/legislative_affairs/SB_1029_Project

[Update Rpt 11 2013.pdf](#) .

The comments below are taken from the STB comments that Attorney Raymond Carlson made on the behalf of Kings County Water District and CCHSRA on March 7, 2014. I am in agreement with Mr. Carlson's assessment, the numbers the Authority is demonstrating are not in agreement with the \$6 billion for the first building section that the Authority proposes for the Central Valley. A segment declared illegal by the Superior courts.

Under the section called program costs on Table 2 it lists these costs: Merced-Fresno \$5,482 million and Fresno-Bakersfield \$7,711 million

The report states that the above figures include \$8 billion in program wide costs (rolling stock etc) that were prorated across project sections, and that these program wide costs represent about 3% of the project's costs. Therefore, if we reduce the above figures by 3%, the remaining costs for this segment would be:

Merced-Fresno \$5.318 million and Fresno-Bakersfield \$7.480 million
Total \$12.798 million

The Authority's staff also prepared another recent report, a 70 page document entitled, "Staff Recommendations: Preferred Alternative-Fresno to Bakersfield Section," dated November, 2013."

It estimated that the preferred alternatives for the Fresno to Bakersfield section would cost \$7.174 billion (in 2010 dollars). Of course this number should be escalated to reflect year-of-expenditure cost. Assuming construction primarily occurring in 2015, and assuming a 3% per year cost escalator, this number swells to \$8.074 billion.

As you can be seen, the Authority's most recent estimates do not

appear to agree, except that it is clear that it's costs are escalating and exceed by a considerable amount the approximately six billion it had from federal grants and state bond (Prop.1A) funds.

Since the costs are escalating that means that the Authority will build less miles. It is estimated in the Bakersfield STB comments, dated March 7, 2014 that it will be 87 miles constructed not 130 and with the information above, it may be far less. This isn't advertised or honestly discussed by the Authority. The fact is you are not required to build 130 miles and in fact you will build less and less as the costs go up.

Ridership:

http://mildredwarner.org.s3.amazonaws.com/2012/09/20/Zhong_Bel_Warner_HighSpeedRail_2012-b19b0817.pdf (Cornell and Barcelona Paper on comparison of Spain and California):

California has spread out populations, spread out job center, inadequate income levels located near stations to support high-speed rail. Ridership short falls are expected. The authors specifically say this in their findings.

"We show that polycentric cities such as Los Angeles and San Francisco are less attractive candidates for HSR than mono-centric cities such as Madrid or Barcelona. Because demand projections give insufficient attention to urban structure, this can lead to overestimations of ridership. Policy makers and transportation planners should give full consideration to urban structure and its effects on HSR competitiveness."

Authority's numbers:

I find it interesting that short-term travelers increased (25% increase in the ridership in the medium category) and long-term trips decreased. Since the longer trips make more money, you had to do

something to avoid the appearance of a subsidy so you kicked up the ridership.

Travel times:

I note in the 2014 Draft business plan document called service plan, non-stop travel time from LA to TBT is 3 hours 8 minutes. While the Authority and Dan Richard has commented that designed to achieve and pure travel times are all that are required, in the Senate Transportation Meeting of March 27th, Lou Thompson of the Peer Review group said if the demand was there, with infrastructure changes beyond Phase one blended, the times of 2 hours and forty minutes could be done. Here's Mr. Thompson's complete testimony: <https://www.youtube.com/watch?v=hZKFTptL1Ls>

But there are some problems with the concept "someday we will comply. " The Senate has deliberately put barriers in the way to make this happen. It shows intentions.

There was Legislative Counsel opinion by the way written with giving the Authority all the benefits of the doubts and was issued to Senator Joe Simitian and Senator DeSaulnier back in June 8, 2012, who by the way voted no for funding the project the following month. Legislative Counsel said,

"If the blended system proposed by the revised business plan would not meet every design characteristic of the HSR system required by the bond act, it may nonetheless be possible for the revised business plan to be in compliance with the bond act if the revised business plan continues to include a "full-build" option for the blended segments, wherein the blended system components to be constructed with Proposition 1A HSR funds would be merely an interim step toward completion of a full HSR system.

On the other hand, if the full-build option for the blended segments is

not a part of the revised business plan, we think the blended system itself, as the ultimate system in those segments, would need to meet the design characteristics or risk being vulnerable to challenge.”

They say this about the timing of the San Francisco to San Jose segment which may not exceed 30 minutes per Prop 1A.

“With respect to the San Francisco-San Jose segment, which under the revised business plan is proposed to be constructed as a blended system rather than on a new high-speed rail alignment, and by extension, the overall San Francisco-Los Angeles segment, which would incorporate the blended segment, compliance with the bond act is not clear. We reviewed with the authority the results of the LTK study for the Caltrain Joint Power Board entitled "Caltrain/California HSR Blended Operations Analysis" (March 2012) (hereafter LTK Study) which identified somewhat longer high-speed train running times for several operating scenarios between San Francisco and San Jose, namely 45, 43, and 37 minutes (LTK Study, pp. 46-50). In addition, these running times were based on the current Caltrain station, located at 4th and King Streets, being the San Francisco terminus, rather than the more remote Transbay Terminal (LTK Study, p.15).”

As the Leg Counsel’s report indicates, the electronic travel runs Caltrain prepared were primarily to 4th and King, add 3-5 minutes for Fourth and King. \$3 billion for the tunnel to Transbay, does the Authority have that money? Who’s paying for the electrification to 4th and King. Certainly the Authority can’t since they are only to pay for electrification that will be used by high-speed rail.

Here’s another catch: Senator Jerry Hill passed legislation, [SB 557](#) in September 2013 that protects the peninsula and keep high-speed rail to primarily operate on the Caltrain’s existing two track system so it would be hard to envision that the blended system was only the first step to a full-build system. There were also 4448 Senate journal

notes entered by Senator Leno on August 9th that in part said this said this:

- The project-level environmental documents certified for this segment, and related construction and operation funded by the appropriation, shall be consistent with the blended approach of the Revised 2012 Business Plan, and shall not reflect the four-track system in the program-level environmental document.
- The system shall primarily consist of a two-track system of shared rail with the Peninsula Corridors Joint Powers Board, which will be substantially within the existing right of way used by Caltrain.

The Caltrain electrification program has different platform heights. He also points out the vast number of questions to be answered on a shared corridor. Have those been worked out? This was also brought up by Lou Thompson at the Senate Transportation Hearing on March 27th, 2014. <https://www.youtube.com/watch?v=hZKFTptL1Ls>

By the way, at the time of the application for the federal grants, it was clear according to then CEO Van Ark that the feds didn't think electrification was the right independent utility for the grant funds since it wasn't in the correct engineering sequence meaning it might have to be pulled out and redone later. In July 2010 this article was written supporting this idea. I was present at the meeting that Mr. Val Ark made these statements in then board member Quentin Kopp's office. <http://www.examiner.com/article/california-high-speed-rail-fra-prefers-funding-one-route-new-stimulus-applications>

I don't think the court will accept the concept that someday we'll comply when I just mentioned legal impediments purposely devised to prevent a full build program which means there should be separate tracks for high-speed rail. You also have no financial where with all to buy billions in property along the corridor to widen it for a four-track

option.

Do you think it is reasonable in Frank Vacca's declaration about travel time that the speed is constant. Is there absolutely no changes in speed for slowing down or speeding up? Is there a northbound study for San Jose to San Francisco- no. So in order for the train to stop it would have crash into the Transbay terminal. There was not specific enough numbers or details so that the results could be duplicated. Who did this model? Vacca is not a licensed engineer unless he didn't include it in his credentials. In the Transbay bridge discussions there were talks about licensed professional engineers being fearful of becoming unlicensed due to the shoddy work. In that case they were being told by non-engineers what to do and what not to test. I wonder what PB engineers were told what to do to produce those "pure" travel time runs.

Also the description, designed to achieve, is open for interpretation which appears subject to interpretation when Prop 1A uses these strong words. "Maximum nonstop service travel times for each corridor that shall not exceed the following."

This travel time requirement was the most important element presented to the voters as an inducement for their vote in November, 2008, because, after all, what is more important than getting to your destination quickly and faster than the airlines? The public will judge their travel on timetables and finally really life experiences. That decision will be based the real times and that translates into loss of passengers. Loss of passengers translates into less revenue, which translates into operating subsidies.

Since the Authority cannot make the required trip time, I do not understand how you can be eligible to receive 1A bond funds.

On another level of the trip time requirement: Prop 1A requires you to go from LA Union Station to the Trans Bay Terminal (tot) NOT 4th

and King; yet your business plan says you are going to 4th and king! How do you explain this? How can this be legal under 1A which REQUIRES going to the TBT? Is this because you cannot afford the \$3 billion to tunnel from 4th and King to the tot? Please explain.

Also, Prop. 1A requires that the headway be at least 12 trains per hour (12 HSR trains, not commuter rail). This is a train every five minutes, and this requirement is mandatory.

Usable segment vs. independent utility

The High-Speed Rail project seems to use these terms interchangeably. They are not. 2008 envisioned a plan reserving \$9 billion just for high-speed rail with \$950 million for connectivity projects. You are right when you say that the program is allowed to be built in phases, yes, that is true. But each “usable segment” has to be between two stations and must be high-speed ready including the electrification but most of all the proper ridership to support enough profit as to not produce an operational subsidy. You cannot have enough ridership to produce this result. Your chairman and many other people on your staff and your hired attorneys said your ICS is not a usable segment and there was never intended to be enough ridership to run independently. So you see it’s pretty hard to suggest such a tiny segment stated as 130 miles, which by the way may only produce 87 miles, passes the sniff test.

Independent Utility in the federal usage means it won’t go to waste and something useful will come of it, someone else can use it but it simply doesn’t have to be profitable.

By the way, the Central Subway system, who asked for and by this time was collected \$61 million dollars was based on, well a lie. It does not connect to Transbay Terminal. It’s a four-block walk. While the Authority is not officially in charge of these funds, they,

specifically Dan Richard, were aware of this request and did not protest.

Anaheim:

Where is it? It was out and then in, inside a two week period in April 2012. It disappeared just prior to the April 12, 2012 board meeting and returned at the very end of the board meeting. In two years after you promised to put Anaheim back in at the last part of the Board meeting you've come up with nothing.

<http://calwatchdog.com/2014/02/13/new-high-speed-rail-business-plain-mainly-raises-questions/>

The meeting you approved the new blended business plan on April 12, 2012 perhaps it was an attempt to obtain a few votes for the appropriation, perhaps in an attempt to get the number for the new blended business plan under \$70 billion. Whatever, it was deceptive. So you've come up with no lower cost solution for Anaheim and it's clear that it's supposed to be Phase One. You don't have to build it this moment but it belongs in the business plan for high-speed rail, not a hop on Metro link. That's not a one-seat ride.

Your 2014 business plan does NOT provide for this required headway. Please explain this omission. And note that the headway required is for HSR trains, not a combination of HSR and commuter/conventional trains. Conventional trains were going to be allowed to use high-speed rail ready tracks, as the project awaited final connection of all segments. The tracks were not being built for Amtrak as it seems is the goal today in order to have independent utility for the spending of Federal funds.

Though not advertised, it was thought that each segment would not operate independently because it would be too costly per Daniels but only have all segment were ready to be connected. New link for Operations meeting August 2009: Tony Daniels.

http://www.hsr.ca.gov/docs/brdmeetings/2009/August/brdmtg_082009ArchivedWrkshp.mp4

Project Labor Agreements:

These comments were prepared by Kevin Dayton, who is both an expert and critic on the subject of Project Labor Agreements and California High-Speed Rail project. He honed in on a section in the business plan as distorted and inaccurate and I agree with this statements. There are many objections found in this article and just a few are listed below. <http://laborissuesolutions.com/analysis-of-the-phony-community-benefits-and-other-provisions-in-the-union-project-labor-agreement-for-the-first-segment-of-californias-high-speed-rail/>

he California High-Speed Rail Authority board has never commented on the Project Labor Agreement (aka “Community Benefit Agreement”), discussed it as a formal agenda item, or voted on it. In a January 16, 2013 email about the Project Labor Agreement to the former chairman of Fresno County Economic Opportunities Commission, the Small Business Advocate of the California High Speed Rail Authority stated that “The Community Benefits Agreement (CBA) is an internal administrative document that was not necessarily intended to be circulated for public comment.”

As the implementation document for the “Community Benefits Policy,” the Project Labor Agreement (aka “Community Benefit Agreement”) does not and cannot “ensure” that Central Valley workers from “Economically Disadvantaged Areas” will perform any percentage of hours. Workers from any “Economically Disadvantaged Area” in the country are eligible to fulfill the goals. The Draft Business Plan distorts by not recognizing this.

The Draft 2014 Business Plan states that “the majority of workers [from the Central Valley] will qualify as disadvantaged workers.” This

is conjecture – no one has been hired yet for any trade work. In addition, there is no indication of how many workers will actually be long-term residents of the Central Valley, how residency will be determined, or how unions will dispatch workers through the “registration facilities and referral systems established or authorized by this Agreement and the signatory Unions” as indicated in the Project Labor Agreement (aka “Community Benefit Agreement”). The Draft Business Plan distorts by not recognizing this.

Conclusion:

For all these many reasons, the Authority should completely redo this 2014 draft business plan and attempt to come out with one that complies with the rulings of the court and the law that governs to project. Despite all the talk that this is a Transportation Program, it is not. It is a high-speed rail project using \$9 billion dollars for that specific purpose and with limited dollars for connectivity dollars in the amount of \$950 million to allow other transit agencies to connect directly with high-speed rail. The public did not vote for a rail modernization program. Ask them in another bond measure but the Authority should not be attempting to morph this very specific project into that, it wasn't approved by the public.

Kathy Hamilton



2014 Business Plan RECORD DETAIL

Record Date : 4/3/2014

Submission Date : 4/3/2014

Affiliation Type : State Agency

Interest As : State Agency

Submission Method : Website

First Name : Ernest

Last Name : Pazzi

Business/Organization : Retired

City : Danville

County : Contra Costa

Zip Code : 94526

Stakeholder Comments/Issues : We don't need the high speed Railway! Use that money to build desalination plants up and down the coast of California. Let's prepare for the future and stop sending more and more water to Southern Cal!

**Draft Business Plan Comment
Type :**

2014 Business Plan RECORD DETAIL

Record Date : 4/4/2014

Submission Date : 4/4/2014

Affiliation Type : Individual

Interest As : Individual

Submission Method : Website

First Name : Robert

Last Name : Allen

Business/Organization :

City : Livermore

County : Alameda

Zip Code : 94551

Stakeholder Comments/Issues : Google "Bourbonnais Train Wreck". Two Amtrak locomotives and 11 of 14 cars derailed at a grade crossing on 79 mph track (same speed as Caltrain, but slow for HSR). 11 people killed. 228 injured. That was an accident, a couple of years before the 9/11/01 attack on the World Trade Center that made terrorism a real threat.

2008 Prop 1A was for "The Safe, Reliable High Speed Passenger Train..." HSR needs a secure trackway, fenced and without grade crossings. The "Blended Rail" of HSR on Caltrain (with its scores of grade crossings) would be NEITHER SAFE NOR RELIABLE.

HSR should truncate at San Jose, with easy transfers there to Caltrain, Capitol Corridor, and the planned Silicon Valley BART line.

Later HSR should follow an upgraded East Bay Mulford UP/Amtrak route toward Sacramento with an Oakland transfer at the BART overhead six to ten minutes from four downtown San Francisco BART stations. (BART trains there run about every four minutes.)

**Draft Business Plan Comment
Type :**

2014 Business Plan RECORD DETAIL

Record Date : 4/4/2014

Submission Date : 4/4/2014

Affiliation Type : Individual

Interest As : Businesses And Organizations

Submission Method : Project Email

First Name : Morris

Last Name : Brown

Business/Organization :

City :

County :

Zip Code : 94025

Stakeholder Comments/Issues : Please include the attached document in WORD format as my comments on the Draft 2014 Business plan.

Morris Brown

[REDACTED]
Menlo Park, CA
94025

[REDACTED]

**Draft Business Plan Comment
Type :**

Attachments : moris-comments-on-Draft-2014-Bus-plan.pdf (12 kb)

Submitted via email to: 2014businessplancomments@hsr.ca.gov

April 4 2014

**Comments On the
California High-Speed Rail Authority's Draft 2014
Business Plan**

The Draft business plan diverts Prop 1A funds for regional projects.

Prop 1A has no allowances, except for the \$950 million allotted to “connectivity projects”, for “rail modernization” aka regional projects. Yet the 2014 business plan, emphasizes, Rail Modernization numerous times (actually 12 times). (see 2 examples below). SB-1029 blatantly approved \$1.1 billion in appropriation from the \$9 billion of HSR funds in Prop 1A for these types of projects

Clearly this appropriation is illegal.

1. Note should be taken that administration of these funds will be not even be done by the Authority, but by the regional agency (ie., \$600 million diverted to CalTrain for its own electrification project.) Clearly this is not a HSR rail project, but a regional “rail modernization project --- reference below the page 18 paragraph)
2. Required matching funds for CalTrain’s project, as laid out in the MOU between CalTrain and the Authority, were for the most part to be secured from funds (envisioned) from the FTC. The FTC funds and covers intra-City rail projects. The HSR project is an inter-City Passenger rail project. This is even more evidence , that despite the Authority proclaiming, Electrification is HSR, CalTrain electrification is clearly nothing more than a regional project.
- 3 The now released draft of the CalTrain EIR for electrification, does not even include going beyond 4th and King to the TBT; yet Prop 1A demands the HSR project start at the TBT.
- 4 The \$500 million diverted to So. Cal agencies, contains not a single project where the rails would be electrified, yet HSR is defined in Prop 1A, as a project using electricity for power.
5. SB-1029, passed in July 2012 included this \$1.1 billion for “bookend” projects. Prop 1A demands appropriations be preceded with an approved funding plan. The only funding plan approved by the Authority, was dated Nov 2011. This funding plan

had no funding included for the “blended plan” / “rail modernization”, to be spent from the \$9 billion of Prop 1A funds allotted to HSR.

.
Morris Brown
Founder of DERAİL
[REDACTED]
Menlo Park

from the 2014 bus plan)

page 4. of bus plan

Also in 2012, the Authority adopted its 2012 Business Plan that laid out a new framework for implementing the California high-speed rail system in concert with other state, regional and local rail investments, as part of a broader statewide rail modernization program. In that same year, the Legislature approved—and Governor Brown signed into law—SB 1029 (Budget Act of 2012) approving almost \$8 billion in federal and state funds for the construction of the first high-speed rail investment in the Central Valley and 15 “bookend and connectivity” projects throughout the state. Work is underway on these major investments in California’s transportation infrastructure. This is the Authority’s Draft 2014 Business Plan. It builds on and updates the 2012 Business Plan, implements requirements of SB 1029, identifies progress to date and describes the next major decisions and milestones that lie ahead.

page 18..

Prior to 2020, Proposition 1A investments in urban transit systems and rail modernization projects like the Caltrain electrification project will result in tens of thousands of tons of reductions in GHG emissions. California leads the nation in establishing policies to reduce GHG emissions. In 2005, former Governor Schwarzenegger signed an Executive Order directing that GHG emissions be reduced to 80 percent of 1990 levels by 2050 and in 2006, and the Legislature passed AB 32, the Global Warming Solutions Act, which further directs

2014 Business Plan RECORD DETAIL

Record Date : 4/4/2014
Submission Date : 4/3/2014
Affiliation Type : Individual
Interest As : Businesses And Organizations
Submission Method : Letter
First Name : Luis
Last Name : Marquez
Business/Organization : Eco-Rapid Transit
City : Paramount
County :
Zip Code : 90723
Stakeholder Comments/Issues :
Draft Business Plan Comment Type :
Attachments : Ltr Jeff Morales_CHSR_2014 0328 FINAL.pdf (850 kb)



Eco-Rapid Transit, formerly known as the Orangeline Development Authority, is a joint powers authority (JPA) created to pursue development of a high speed, grade separated transit system that is environmentally friendly and energy efficient. The system is designed to enhance and increase transportation options for riders of this region utilizing safe, advanced transit technology to expand economic growth that will benefit Southern California. The Authority is composed of the following public agencies:

City of Artesia

City of Bell

City of Bell Gardens

City of Bellflower

City of Cerritos

City of Cudahy

City of Downey

City of Glendale

City of Huntington Park

City of Maywood

City of Paramount

City of Santa Clarita

City of South Gate

City of Vernon

Burbank-Glendale-Pasadena
Airport Authority

Chairman

Luis Marquez
Mayor Pro Tem
City of Downey

Vice Chairman

Maria Davila
Council Member
City of South Gate

Secretary

Rosa E. Perez
Vice Mayor
City of Huntington Park

Treasurer

Michael McCormick
Mayor
City of Vernon

Auditor

Scott A. Larsen
Council Member
City of Bellflower

Executive Director

Michael R. Kodama

General Counsel

Teresa L. Highsmith

Ex-Officio

Rene Bobadilla
City Manager Representative

March 28, 2014

Jeff Morales
Chief Executive Officer
California High Speed Rail Authority
777 L Street, Suite 800
Sacramento, CA 95814

Re: Draft 2014 CHSRA Business Plan

Dear Mr. Morales:

On March 12, 2014, the Board members of ECO-RAPID TRANSIT heard a presentation by Michelle Boehm, Southern California Regional Director for the California High Speed Rail Authority (CHSRA) project and talked about CHSRA and the draft CHSRA business plan. ECO-RAPID TRANSIT supports faster and safer rail transit service on the Antelope Valley Line from Santa Clarita to Downtown Los Angeles and is in support of the current CHSRA blended approach.

ECO-RAPID TRANSIT is a Joint Powers Authority (JPA) comprised of 15 members (14 cities and Burbank Bob Hope Airport) in a 60 mile corridor from Santa Clarita to Downtown Los Angeles to Cerritos. It supports the creation of more jobs and connects over 4 million residents to the regional transportation system.

ECO-RAPID TRANSIT has been monitoring the development of the California high-speed rail program. We have been particularly interested in the priority given to the "blended systems approach" delineated in the 2012 revised Business Plan adopted by the Authority. The Draft 2014 Business Plan places a similar priority on this common-sense approach to developing a modern statewide rail program serving key metropolitan areas of the State. The CHSRA Draft Business Plan provides a positive and important framework for moving forward with the development of a statewide-integrated rail program—"Connecting California", including the potential for supporting connectivity of various transportation modes.

Specifically, the proposed business plan has the following features that support the mission of ECO-RAPID TRANSIT:

- Consistency with the motion co-authored by Los Angeles County Metropolitan Transit Authority (Metro) Directors Antonovich and Najarian to create a "Metrolink Antelope Valley Line Infrastructure Improvement Strategic Plan." Under the blended system approach, ECO-RAPID TRANSIT supports double tracking critical parts of the Antelope Valley rail alignment to improve regional rail connectivity in coordination with the CHSRA. The new alignment improves overall travel times in the corridor.
- ECO-RAPID TRANSIT supports the concept of a CHSRA station at Bob Hope Airport. ECO RAPID TRANSIT supports creating and enhancing transit connections to Bob Hope Airport. This proposal leverages Metro's



Eco-Rapid Transit, formerly known as the Orangeline Development Authority, is a joint powers authority (JPA) created to pursue development of a high speed, grade separated transit system that is environmentally friendly and energy efficient. The system is designed to enhance and increase transportation options for riders of this region utilizing safe, advanced transit technology to expand economic growth that will benefit Southern California. The Authority is composed of the following public agencies:

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General Counsel

Teresa L. Highsmith

Ex-Officio

Rene Bobadilla
City Manager Representative

recently adopted policy to emphasize airport connectivity to the regional rail funding priorities (plane-to-train).

- A commitment to implement "thru" tracks at Los Angeles Union Station. This feature is critical to improved CHSRA travel speeds as well as critical to the mission of ECO-RAPID TRANSIT to connect businesses, jobs and residents to both the north and south segments of the corridor.

ECO-RAPID TRANSIT board appreciated the presentation by Michelle Boehm. We look forward in the future to continuing the close working relationship with Ms. Boehm and CHSRA. We appreciate the opportunity to submit our comments and urge CHSRA to continue the collaborative approach with your local and regional partners.

Sincerely,

Luis Marquez, Chairman
ECO-RAPID TRANSIT

cc. Members, ECO-RAPID TRANSIT Board
Members, CHSRA Board
Ms. Michelle Boehm, CHSRA

2014 Business Plan RECORD DETAIL

Record Date :	4/4/2014
Submission Date :	4/4/2014
Affiliation Type :	Individual
Interest As :	Individual
Submission Method :	Letter
First Name :	Ted
Last Name :	Hart
Business/Organization :	
City :	
County :	
Zip Code :	00000
Stakeholder Comments/Issues :	
Draft Business Plan Comment Type :	
Attachments :	Hart.BP.040314.pdf (4 mb)

April 3, 2014

California High-Speed Rail Authority
770 L, Suite 800
Sacramento, CA, 95814

Re: Materials To Be Included in HSRA 2014 Business Plan

Please include these materials in Comments To The 2014 High-Speed Rail Authority Business Plan.

Jeremy Fraysse, Fiscal and Policy Analyst
Legislative Analyst Office

William Ibbs, Professor
UC Berkley Department of Civil Engineering

Paul Dyson, President
Rail Passenger Association of California

William Grindley

Louis S. Thomnpson, Chairman
High-Speed Rail Peer Review Group
Go to Senate Video On Demand, March 27, 2014, Informational Hearing 52:15 - 1:03

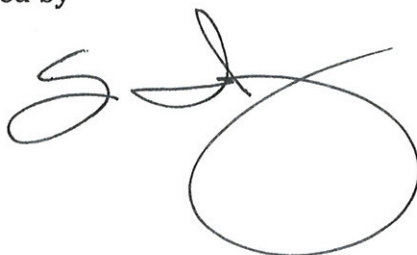
Sincerely,



Ted Hart

Received by

Date



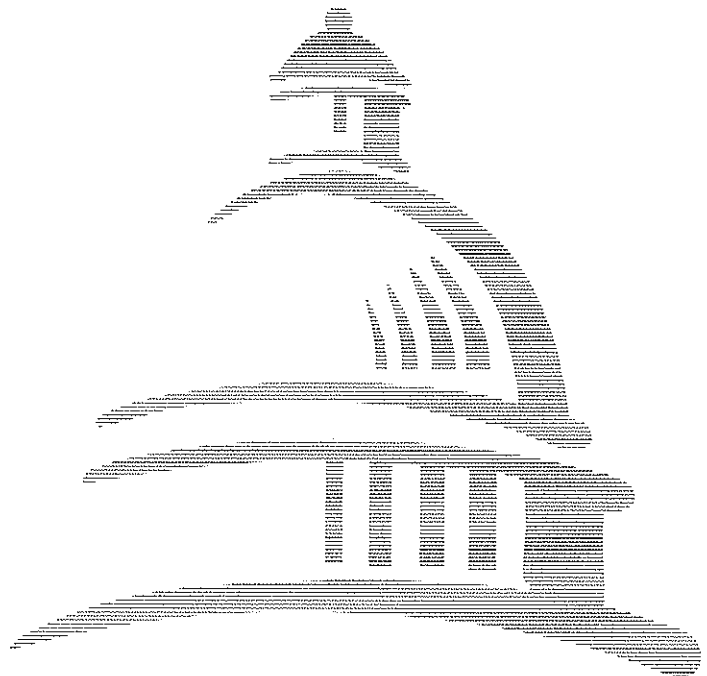
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March 27, 2014

Funding for the High-Speed Rail Project

LEGISLATIVE ANALYST'S OFFICE

Presented to:
Senate Transportation and Housing Committee
Hon. Mark DeSaulnier, Chair





Background



Current Funding Available for High-Speed Rail

- In November 2008, voters approved Proposition 1A, which allows the state to sell up to \$9.95 billion in general obligation bonds to partially fund the high-speed rail system. The bond funds authorized in Proposition 1A require a match of at least 50 percent from other funding sources.
- The state has received about \$3.5 billion in federal funds for planning, engineering, and the construction of high-speed rail, which require matching funds.



Construction to Start in Central Valley in 2014

- First operation of high-speed rail is planned to begin in 2022 after construction of the Initial Operating Segment (IOS), which would extend 300 miles from Merced to the San Fernando Valley. According to the 2014 draft business plan of the High-Speed Rail Authority (HSRA), the expected cost to complete the IOS is about \$31 billion.
- Construction of the IOS will begin on a segment extending 130 miles from Madera to Bakersfield, referred to as the Initial Construction Segment (ICS). The HSRA anticipates that construction of the ICS will begin in 2014 and be completed in 2018.



Background

(Continued)



Two Major Legal Cases Involving Use of Proposition 1A Bond Funds

- On November 25, 2013, the Sacramento Superior Court found that the funding plan that HSRA submitted to the Legislature in November 2011 in conjunction with a request for an appropriation of Proposition 1A bond funds for the IOS did not meet certain requirements specified in the proposition (such as identifying all of the funds that will be invested in a usable segment of the high-speed rail system). As a result, the court ordered the HSRA to rescind the funding plan, thereby halting any Proposition 1A bond proceeds expenditures to support the construction of the IOS.
- On November 25, 2013, the Sacramento Superior Court denied the administration's request that the court validate the issuance of more than \$8 billion in Proposition 1A bond funds. Based on this ruling, the State Treasurer's Office currently does not plan to sell Proposition 1A bonds.
- The state is currently in the process of appealing both of these rulings.



HSRA Expenditures

(Dollars in Millions)

	Actual 2012-13	Estimated 2013-14	Proposed 2014-15	Change From 2013-14	
				Amount	Percent
State Operations					
Proposition 1A bond funds	\$17.7	\$26.4	\$29.3	\$2.9	11.0%
Local Assistance					
Federal funds	—	—	\$32.0	\$32.0	—
Capital Outlay					
Proposition 1A bond funds	\$27.3	\$22.0	—	-\$22.0	-100.0%
Greenhouse Gas Reduction Fund	—	—	\$250.0	250.0	—
Federal funds	185.8	571.3	1,078.7	507.4	88.8
Subtotals, Capital Outlay	(\$213.1)	(\$593.3)	(\$1,328.7)	(\$735.4)	(124.0%)
Totals	\$230.8	\$619.7	\$1,390.0	\$770.4	124.3%

- The Governor's budget proposes a total of \$1.4 billion to HSRA for the high-speed rail project in 2014-15. As shown in the above figure, this is an increase of \$770 million from the 2013-14 level.
- Most of the funding proposed for the budget year would be for the construction of high-speed rail.



Governor's Proposal to Use Cap-and-Trade Auction Revenue

- The Governor's budget proposes \$250 million in cap-and-trade auction revenue (Greenhouse Gas Reduction Fund [GGRF]) to support the development of the high-speed rail system in 2014-15. This includes (1) \$58.6 million for environmental planning for the first phase of the project and (2) \$191.4 million to purchase land and partially support construction of the IOS.
- In addition, the Governor is proposing budget trailer legislation that, beginning in 2015-16, 33 percent of GGRF revenues be continuously appropriated to HSRA for the high-speed rail system.
- The Governor is also proposing that when the remaining balance of \$400 million from a loan made from the GGRF to the General Fund in 2013-14 is repaid, the funds be directed to HSRA for the IOS.



Issues for Legislative Consideration



Using Cap-and-Trade Auction Revenues for High-Speed Rail May Not Maximize Greenhouse Gas (GHG) Reductions

- The high-speed rail project would not contribute significant GHG reductions before 2020, which is the statutory target for reaching 1990 emissions. This is because the high-speed rail system will not be operational until 2022.
- The construction of high-speed rail would actually generate GHG emissions of 30,000 metric tons over the next several years. (The HSRA plans to offset these emissions by planting thousands of trees in the Central Valley.)



No Complete Funding Plan for IOS

- In its 2014 draft business plan, HSRA identified a total of \$10 billion in funding available to support the construction of the IOS. The plan states that an additional \$21 billion will need to be identified in order to complete the IOS.
- The state will likely be the only source of additional funding to address the \$21 billion shortfall identified by HSRA.



Issues for Legislative Consideration

(Continued)



Unclear How Much Cap-and-Trade Funding Will Support High-Speed Rail in Future

- It is unclear how much cap-and-trade auction revenue will actually be allocated to high-speed rail in 2015-16 and beyond to complete the IOS under the Governor's plan. While the Governor is proposing that 33 percent of all state auction revenues be continuously appropriated to HSRA beginning in 2015-16, the administration has not provided an estimate of projected cap-and-trade auction revenues.
- Absence of a detailed plan makes it difficult for the Legislature to determine if the Governor's proposed use of cap-and-trade auction revenues, along with available federal funds and Proposition 1A bond funds, would be sufficient to fund the expected costs per year to complete the IOS.



HSRA Expending Federal Funds While Matching Proposition 1A Bond Funds Face Legal Risks

- For the remainder of 2013-14 and 2014-15, HSRA plans to spend about \$1.6 billion in federal funds, which requires a match of state funds. However, as mentioned earlier, the availability of Proposition 1A bond funds has been the subject of litigation.
- If federal funds are expended as planned, and the state does not provide matching funds, the Federal Railways Administration reserves the right to require the state to repay federal funds spent on the project.

Legislative Testimony of Professor William Ibbs¹

3/27/14

Thank you, Senator DeSaulnier. And I want to thank you again for speaking to my students at Berkeley two weeks ago, they were thrilled. It's a privilege to be here again and to offer some thoughts on the important questions you and your committee are facing. These thoughts have been formed by my 40+ years of large-scale construction project experience around the world, including the Big Dig, Panama Canal, and numerous rail systems including BART, LA MTA, Seattle's Central Link, Copenhagen's Comet system, and Johannesburg South Africa's Gautrain. My comments are also framed by my research work at Berkeley, where I have studied and quantified cost and schedule performance on over 2000 large-scale construction projects. That work's been published in various scholarly journals and mentioned in the background paper to this hearing.

I was asked to address three questions today:

1. What does a "world-class passenger rail system" in California look like? In megaproject parlance, what are the appropriate performance specifications, and have they been defined correctly in the high-speed rail project?
2. Does the HSRA's Draft 2014 Business Plan provide a roadmap to success according to the performance specifications defined for it, and does it demonstrate progress toward meeting them?
3. Are there alternative pathways, plans, and/or procedures toward a high-speed rail system that succeeds as a world-class passenger rail system?

I may be a party pooper, but let me first say that I would hope that somewhere along the way you and your committee revisit the question of whether we should be devoting billions of dollars to a high-speed, passenger-based rail system when we have pressing problems with our

¹ Professor of Construction Management, Dept. of Civil Engineering, UC Berkeley; and President of The Ibbs Consulting Group. (510) 420-8625 and Bill@TheIbbsConsultingGroup.com

highways and airports. The American Society of Civil Engineers latest report card for California gives our highways a C- and calls for us to spend \$10 billion per year to just maintain those roadways. There are many more people that will use our highways than will use this rail system, and I urge you and your committee to look at transportation investment across the board and to give us a world-class highway system that will serve the folks of Hayfork, Berkeley, and Los Angeles more often than this rail system that only goes between some fixed destinations.

However, if the decision is to look at how to spend money on rail systems, our research at Berkeley and my consulting work with rail systems around the world tells us there are grave financial and operational risks with large-scale public projects.

1. My research and that of other folks you are familiar with tells us that it's highly probably, I'd say 80% likely, that the costs of this project will come in at least 50% higher than currently projected. That's almost a given. You know the story with the Big Dig and the Bay Bridge. I can tell you that Copenhagen's Comet System and Johannesburg's Gautrain system are costing much, much more to build than the system advocates ever envisioned.
2. The second lesson that we've learned about such huge construction projects is that they take a long time to build, not so much because of the design and construction activities but more so because of the environmental permitting and right-of-way acquisition requirements. The Panama Canal, will be at least 1 year late and that project was only a 5-year project when it was launched. As the Sacramento judge reminded us last November, large expansive projects like this must meet strict environmental permitting requirements. Based on my Big Dig and the South African rail system experience, I suspect that the delay we're seeing associated with this first court ruling will not be the last such ruling and delay. Such delays add to the costs of the project and further jeopardize its financial viability. So in response to the second question I was asked to address "Does the HSRA's Draft 2014 Business Plan provide a roadmap to success according to the performance specifications defined for it, and does it demonstrate

would appeal to the business or high-end residential traveler that HSR aims for. The typical business traveler will not want to ride on SF's MUNI system. UBER, probably, but not MUNI. We need to develop improvements that would serve these travelers.

3. The last point that I'll make turns on something that Bill Gates, the founder of Microsoft, has noted: "Over the course of three years things change slower than we think, and over the course of ten years they change much more than we imagine." This proposed rail system will take decades, some say 30 years, to build out. I think it's hazardous to think we can predict what riders will want and what technology will offer us. Just look at what Google is doing right now with driverless cars, and consider that technologies like Skype will probably reduce the need for in-person meetings. I know that my college students are much more comfortable communicating, dating, and interviewing over the internet than I and other folks of my generation are. Therefore, we need to build systems that can change and adapt to changing technologies, competition, user needs. Eat the pie in small slices, not all at one time. That is, build the segments today that make the most sense from an economic and public welfare perspective – not the segments that are the easiest to permit.

Thank you, Senator, and I'm now available to answer any questions you may have.

References

William Ibbs (1997). "Quantitative Impacts of Project Change: Size Issues." *Journal of Construction Engineering and Management*, ASCE, 123(3), September, 308-331.

William Ibbs (2005). "Quantitative Impacts of Project Change: Timing Issues." *Journal of Construction Engineering and Management*, ASCE, 131(11), November, 1219-1223.

Edward W. Merrow, Kenneth E. Phillips, and Christopher W. Myers (1981). *Understanding Cost Growth and Performance Shortfalls in Pioneer Process Plants*. Rand Corp. Study, R-2569-DOE, Sept.



RailPAC

Rail Passenger Association
of California and Nevada

P.O. Box 22344
San Francisco CA 94122

www.railpac.org

Testimony to the Senate Transportation and Housing Committee
High Speed Rail Informational Hearing – 27th March, 2014

Chairman DeSaulnier and Honorable Senators:

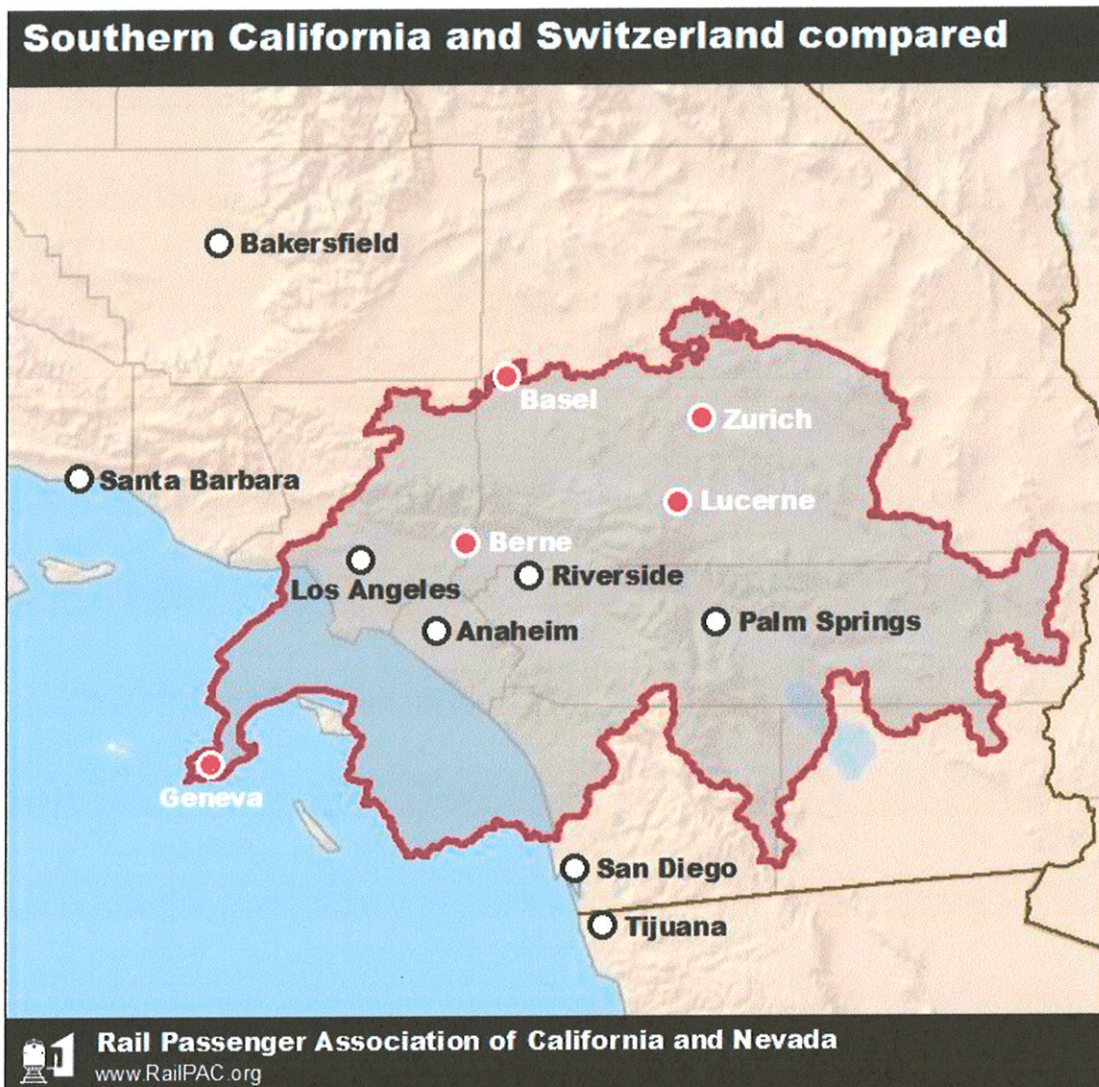
My name is Paul Dyson – I am RailPAC President and Chair of the City of Burbank Transportation Commission, and a recently retired 45 year veteran of the railroad and logistics industry.

RailPAC is an all-volunteer 501c3 membership organization educating the public in the need for a more balanced transportation infrastructure since 1978. We have always advocated investment in modern passenger railroads, both in a dedicated high speed right of way for passenger trains linking the main centers of population in California, as well as continuous upgrades to regional rail and local transit. Our concept continues to be one of incremental improvements, done smartly, so that each investment acts as a building block laid on the foundation of existing facilities. This policy is equally applicable for new high speed rail segments as well as regional rail. It is clearly not possible for a complete 800 mile system to fall from the sky and be instantly in place, so we have to ensure that each segment constructed fulfills a real need in its own right as well as being a part of the whole.

This hearing asks three questions. What do we want to see as the end product? Does the 2014 Business Plan move us in the right direction? What alternatives might give the project better chances for success?

I will be brief in answering the first question, what does a world class passenger rail system look like? Our model is Switzerland, where the transit systems, regional and intercity railroads, even the steamers on the lakes, are coordinated to provide service from just about every bus stop or rail station to every other one in the country every thirty minutes, 18 hours a day, seven days a week. You'll see from the map that Switzerland is about the size of the densely populated areas of northern or southern California, but actually faces far greater topographical challenges. It is an affluent country with high levels of automobile ownership, and yet has very high public transit usage. And of course there is a growing network of European high speed trains which links Switzerland with the major centers of Europe. Thus we advocate two robust regional systems, north and south, with a High Speed link between the two.

We can accomplish the same level of service with carefully planned infrastructure investments, strong *central* direction that *requires* cooperation between agencies, and excellent information and ticketing systems that provide seamless journeys, regardless of the mode selected.



Next I'd like to comment on the draft 2014 Business Plan. This plan calls for initial service between Merced and Palmdale, and, when complete, an as yet undetermined location in the San Fernando Valley north of Los Angeles. We believe that this strategy is exactly wrong for a number of reasons. Passenger rail is all about moving large numbers of people. It is also about providing a transportation product for which people will be prepared to pay their hard earned dollars. The Authority proposes a service, that will be in place for a number of years, whereby passengers will travel by bus or regional train to and from Merced, take a High Speed Train to Palmdale, and a Metrolink train from Palmdale to Los Angeles or beyond. (p12 of Draft Business Plan). We do not really know how long this service will be in place as funds are not identified to build further south into the L.A. Basin.

L.A. County MTA studied the route between Palmdale and Los Angeles a couple of years ago and concluded that even with significant investment there is little that could be done to improve journey times along this line which was originally

completed in 1876. The line follows Soledad Canyon and is built cheaply to typical 19th century standards. As far as modern passenger transportation is concerned I regard it as obsolete. It would be faster to continue to take a bus from Bakersfield.



Existing Rail line south of Palmdale through Soledad Canyon Photo by Clark Bauman

Assuming funds are made available to build a new line south from Palmdale, to this proposed interim terminus, we still do not have service to Los Angeles Union Station, the hub of transit and regional rail and the second largest city in the USA. Where will this interim terminus be? We don't know yet although the Burbank Transportation Commission was told that a decision is imminent. But wherever it is there are no transit connections available to compare to those at Los Angeles Union Station, and clearly the majority of patrons will use either cars or special connecting buses.

Regardless of whatever projections of ridership and revenue might be found in the Business Plan, I ask you to apply the common sense test; would I spend my money on a bus – rail – bus journey say from Orange County to Sacramento, compared to the alternatives that are available? Some might, if they are so enthused about the new technology, but will the patronage be sufficient for the service to make a profit on operations? For that level of inconvenience and that slow a journey the fares will have to be pitched so low to attract passengers such

that an operating profit is out of the question.

What Alternatives does RailPAC propose?

We believe that the logical plan, the one most likely to be successful, is to start construction at Los Angeles Union Station, and build north. There are many very good reasons to adopt this strategy.

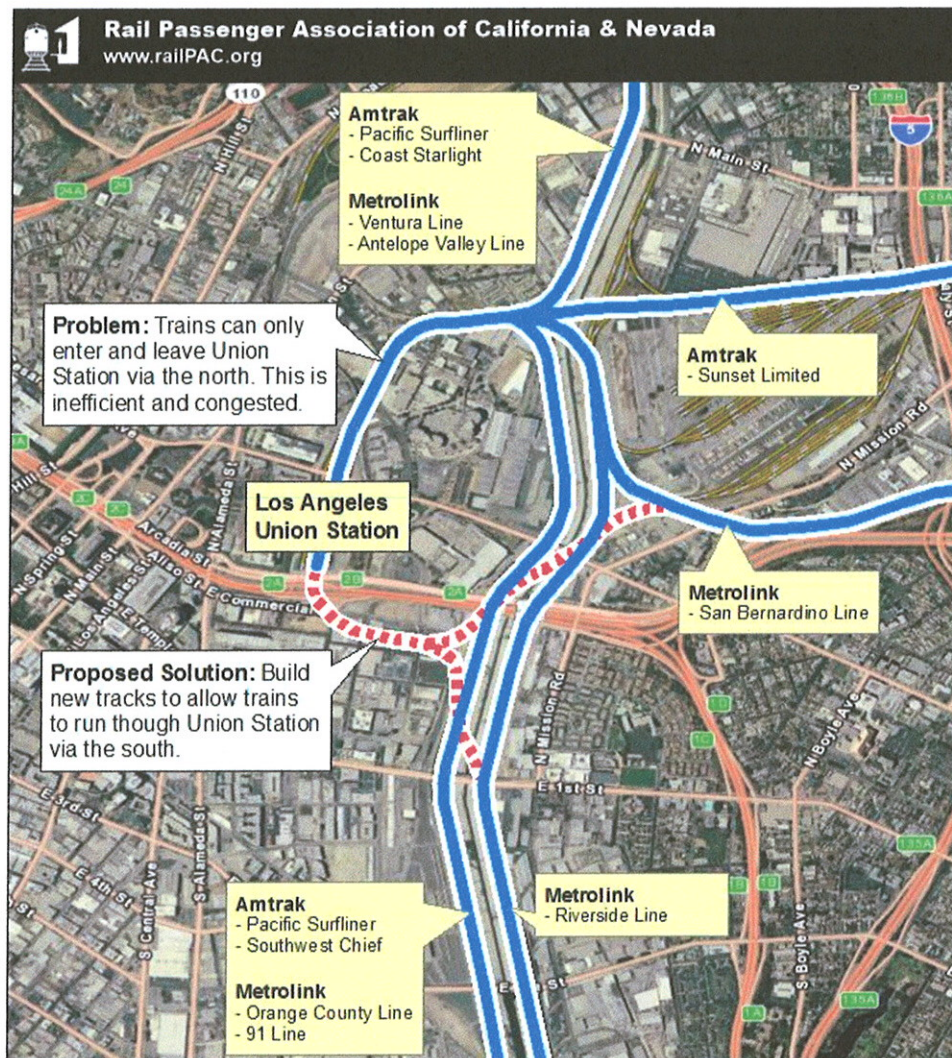
1. A rebuilt Los Angeles Union Station brings immediate benefits to eight of the most populous counties in the state. Converting the station from a stub end to through tracks has the same regional significance as the Transbay tube has to the BART system. It will bring improvements to the daily lives of thousands of Southern California commuters and intercity passengers.
2. Only Los Angeles in the south can generate sufficient numbers of passengers to allow for any prospect of a successful and profitable operation. Trying to initiate High Speed Rail interim service without one of the end points is like trying to open a shopping mall without an anchor tenant. You need a "big box" retailer to bring in the crowds. The Authority's decision to delay service to Union Station until 2028 at the earliest is incomprehensible.
3. The section between Los Angeles and Bakersfield is the most expensive and technically challenging. We believe it is better to solve these problems first rather than "kick the can down the road" and build the easy parts first. Imagine the British and French building the approaches to the Channel Tunnel first before they knew whether the tunnel was feasible or affordable!
4. Construction at Los Angeles, under the High Speed Rail aegis, will provide a demonstration to the majority of Californians that the project is truly under way.
5. A grade separated right of way from Los Angeles to Saugus will eliminate dangerous grade crossings in the San Fernando Valley.
6. There is a gap in the existing state intercity service between the San Joaquin corridor at Bakersfield and the LOSSAN corridor in Los Angeles. Building this segment of new line first will allow through journeys, one seat rides, all the way from San Diego to Sacramento and the Bay Area. This will not be high speed rail but will reduce travel time, eliminate the bus connection, and enhance the travel experience.
7. Bridging the gap between Los Angeles and Bakersfield is truly a project which on its own represents independent utility, regardless of whether there is additional investment in High Speed Rail.

After the link is made to Bakersfield each additional segment of new line will incrementally reduce journey times by allowing higher speed operation over a greater distance. Convenience and speed sell tickets. A single seat ride plus gradually improving journey times will add to the commercial success of the service until end to end high speed operation is achieved.

Mr. Chairman, there is certainly a lot more that could be discussed here but I am mindful of your time and those wishing to make further comments. I'll be delighted to answer any questions you may have.

Paul Dyson

pdyson@railpac.org



SOUTHERN CALIFORNIA REGIONAL INTERCONNECT PROJECT

- Currently trains can only enter and leave Union Station via the 'Throat' - the set of tracks to the north.
- This is inefficient, slow and congested. For example Pacific Surfliner operators have to get out and move to the other end of the train prior to continuing the journey through Los Angeles.
- With the proposed new tracks, the Pacific Surfliner can go through Los Angeles without

- reversing direction. Metrolink trains can also loop around.
- Reduces congestion and wait times. Improves circulation.
 - Makes new Metrolink routes going through Los Angeles possible, such as a route between Orange County and the San Fernando Valley, without the need to change trains.

IF YOU BUILD IT THEY WILL NOT COME

A Forensic Analysis of Why High-Speed Rail In California Will Fail In Its Initial Operating Years

A Briefing Paper – March 11th 2014

Prepared by: William Grindley and William Warren

Forty-one reports by the same authors on the proposed California high-speed rail project can be found at www.sites.google.com/site/hsrcaliffr

Preface: California's High-Speed Rail Authority proposes to bring a new service to the market in 2022. Its initial +\$31 billion cost may make it the most expensive 'launch' in history, and a lot depends on whether it will be able to attract enough riders to make it profitable. If the travel times or costs to passengers for using rail and buses can't beat going by highway or flying, Californians will have to subsidize its operations forever. This Paper puts the origins of that risk under the microscope.

Overview: For five years (2022-2026) the Initial Operating Segment (IOS) **IS** high-speed rail (HSR) in California. The California High-Speed Rail Authority (CHSRA) offers nothing more. During this IOS-Only Phase, there is no travel time advantage for potential HSR riders to abandon the airlines or their automobiles to take combinations of rail and bus transport modes between the LA Basin and the SF Bay Area.

Likewise, would-be HSR travelers during the two-year Bay to Basin Phase (2027-2028) will only benefit from a shorter-than-driving travel time between the downtowns of Los Angeles and San Jose. While more expensive, every itinerary using flights to 'defeat the friction of distance' have significantly lower travel times.

CHSRA's offerings don't seem attractive enough to entice travelers to abandon their autos or the airlines. With nothing more to offer travelers, the chances of the CHSRA meeting their ridership or revenue figures and being profitable seem extremely thin, and the interest of private, at-risk capital seems even thinner.

California's high-speed rail project has truly become a 'Field Of Dreams' and it is doubtful whether 'They Will Come' during the seven years of the Authority's IOS and B2B offerings.

THE AUTHORS

William C. Grindley – World Bank; Associate Division Director, SRI International; Founder and CEO, Pacific Strategies, ret. (BA Architecture, Clemson; Master of City Planning, MIT)

William H. Warren – Officer, US Navy. Forty years of Silicon Valley finance, sales and consulting experience and management, including CEO of several start-ups, Director/Officer at IBM, ROLM, Centigram, and Memorex (BA Political Science, Stanford; MBA, Stanford)

PUBLICATIONS

All available at www.sites.google.com/site/hsrcliffrr and at www.cc-hsr.org, then go to Financial Reports

Major Reports on High Speed Rail by the Authors:

- The Financial Risks of California's Proposed High Speed Rail Project (Oct 2010)
- A Financial Analysis Of The Proposed California High-Speed Rail Project (Jun 2011)
- Revisiting Issues In the October 2010 Financial Risks Report (Sep 2011)
- Twelve Misleading Statements on Finance and Economic Issues in the CHSRA's 2012 Draft Business Plan (January 2012)
- California High-Speed Rail Authority's 2012 Draft Business Plan – Assessment: Still Not Investment Grade (January 2012)
- A Partial Catalog of Inappropriate, If Not Illegal Actions in the Conduct and Execution of California's Proposed High-Speed Rail Project – Volume I, March 2012.
- The CHSRA Knows Their Proposed High-Speed Train Will Forever Need An Operating Subsidy (March 2012)
- A Partial Catalog of Inappropriate, If Not Illegal Actions in the Conduct and Execution of California's Proposed High-Speed Rail Project – Volume II, November 2012.
- To Repeat: The CHSRA Knows Their Proposed High-Speed Train Will Forever Need An Operating Subsidy (December 2012)
- Diminishing Prospects For The CHSRA's Initial Construction Section (July 2013)

Briefing Papers:

- Dubious Ridership Forecasts (Oct 2010)
- Six Myths Surrounding California's High-Speed Rail Project (Jan 2011)
- Seven Deadly Facts For California's High-Speed Rail Authority (Jan 2011)
- A Train To Nowhere But Bankruptcy (Feb 2011)
- Big Trouble For California's \$66 Billion Train (Mar 2011)
- Will The Train Benefit California's Middle Class? (Apr 2011)
- DOT/FRA Has Several Reasons To Withhold Further Funding From California's High-Speed Rail Project, November 2012
- 'Fleeing' Local High-Speed Train Riders While Big City Executives Ride Cheaper, January 2014

Brief Notes: Twenty-three one page, single subject papers on various aspects of financial issues related to the proposed high-speed rail system, Oct 2010 - Aug 2011

Any fault found in this report is solely the responsibility of the Authors.

Introduction – California’s High-Speed Rail In Its First Operating Years –

If the Authority finds at least another \$25 Billion to finance its Initial Operating Segment (IOS), the privately operated IOS is supposed to prove that California’s high-speed rail (HSR) program will eventually deliver passengers between the downtowns of LA and SF in 2 hours 40 minutes, not need an operating subsidy and will attract private capital to complete the system promised in 2008.¹

The first five years of the Initial Operating Segment’s operations, **IS** high-speed rail for Californians. The California High-Speed Rail Authority (CHSRA) offers nothing else. To be financially successful, the whole concept promised to 2008’s voters must be proven early on in what is herein called the IOS-Only Phase. To do that, CHSRA’s only offering during those five years must be an attractive enough option for travelers to abandon airplanes and automobiles.

The risks inherent of an HSR start up – During the IOS-Only Phase, CHSRA will launch a new technology and service. Under the sustainable profit demands of AB3034, the HSR train system must be judged first and foremost as any business is; it either succeeds financially or goes bankrupt.² Eighty percent of all businesses fail within eighteen months of their launch.³ Examples abound of failed launches: for example, Coca Cola’s New Coke, Ford’s Edsel, Apple’s Newton, Microsoft’s Webtv, or Sony’s Betamax. Then there is Webvan, Pets.com, and Solyndra. While investors lost millions of dollars in each failure, the difference is the first group’s launches were from creditworthy, ‘going concerns’ with name recognition and brand value that survived, while the latter were start-ups that no longer exist.⁴

HSR in California is neither a ‘going concern’ nor a ‘disruptive’ technology. It’s an unknown start-up with its brand value indubitably tied to Amtrak’s poor passenger service and annual operating subsidies.

Background – During the five years of the IOS-Only Phase, the Authority only offers high-speed rail between San Fernando and Merced to the present market of Amtrak riders, airline passengers or auto drivers. Travel on the remainder of the route is by conventional rail or bus. That combination must be competitive with existing travel times and prices. But is it? Ridership forecasts tell the Authority’s side of the story.

The 2014 Draft Plan says; *“The Medium outcome for the ridership forecast shows an overall ridership greater than 10 million trips in 2025 . . .”*⁵ In 2022, when the IOS-Only Phase begins and is supposedly profitable, ridership is forecasted to be about 4.6 Million.⁶ The Authority’s 2014 Plan is silent on IOS ridership before 2025, but assumes ridership explodes when IOS-Only operations start.⁷

Figure 1 Forecasted Ridership During IOS-Only Phase And Years 1 and 2 Of B-to-B Operations			
IOS- B2B Ops Year	Year	Central Valley Ridership 2013-2030	Sections Available for Passengers
	2013 actual ⁸	1.2 million	Central Valley
	2017 est.	1.6 million	growth at 6.6% pa 2013-2021
	2021 est.	2.0 million	year before IOS begins
1	2022 est.	4.6 million	IOS-Only – CHSRA estimate
2	2023 est.	6.3 million	IOS-Only – CHSRA estimate
3	2024 est.	8.1 million	IOS-Only – CHSRA estimate
4	2025 est.	10.4 million ⁹	IOS-Only – CHSRA estimate
5	2026 est.	12.3 million	IOS-Only – CHSRA estimate
6	2027 est.	14.6 million	B-to-B becomes operational
7	2028 est.	17.4 million	B-to-B
8	2029 est.	20.6 million ¹⁰	Phase 1 becomes operational
9	2030 est.	24.4 million ¹¹	Phase 1

Figure 1 shows the growth rate in Central Valley Amtrak riders of 6.6% between 2012 and 2013. ¹² Using that record growth rate indicates that in 2021, before the IOS-Only Phase begins, Central Valley ridership would be 2.03 million. According to the Authority, the following year (2022), when the IOS-Only Phase begins, ridership is to more than double to 4.6 million. Figure 1 also shows the Authority expects ridership to increase nearly three-fold during the five years of the IOS-Only Phase. That 28% per year growth would be most enviable.

A Comparative Analyses of Would-Be Travelers' Options In the IOS-Only Phase –To verify whether HSR-travel would be an attractive travel option requires analyzing the IOS-Only Phase's advantages for passengers between its 2022 opening and when the Bay to Basin is operational in 2027. ¹³

Material for that analysis is embedded in a two types of practical examples showing would-be travelers' choices. The first type is of passengers from suburbs within 15 miles of the proposed south and northern terminus for Phase 1. ¹⁴ The potential traveler would be going from Norwalk in the LA Basin to Berkeley in the SF Bay Area. ¹⁵ The second type is central city to central city. The examples are Los Angeles to San Jose, and Los Angeles to San Francisco. As a recent study shows, both Californian metropolises are business centers, which like Europe, will be the arrival or destination of most HSR passengers. ¹⁶

Since HSR service' during the IOS-Only Phase starts at San Fernando, the examples start in the LA Basin, but the sequence could be reversed. The travel time and costs of reaching these destinations are analyzed using three different ways of transit during the IOS-Only Phase – by driving, by way of the CHSRA's offering(s), or by using the airlines as the principal 'distance killer'

While Figure 1's ridership figures look great on paper, doubling the first year and growing three fold in five years – the devil is in the details of what choices would-be passengers are likely to make.

Travel times are the first devil. Although challenged by their Peer Review Group, the Authority's 2014 Draft Plan still clings to promise to voters of a 2 hour 40 minute ride between the SF and LA downtowns.¹⁷ That Plan now 'fudges' travel speed downward from the top 220mph operating speeds promised voters, to operate, " . . . at speeds capable of exceeding 200 miles per hour." ¹⁸ Even an average of 200mph is still unrealistic given that data from decades of operations in Europe and Japan confirm that above about 186mph, power costs surge, maintenance costs increase, deceleration times increase and time advantages of going faster diminish. The IUR/UIC Director of HSR presented Figure 2 to the US Congress in 2007, and Figure 3 analyzes the realities of station-to-station times and average speeds on high-speed rail routes from that presentation.

What jumps out from Figure 3, an analysis of the UIC/IUR presentation's figures in Figure 2, is that the non-stop Paris-Brussels 'Thalys' is the shortest route with the fastest average speed.¹⁹ Stops take time and also require deceleration and acceleration time.²⁰ On average, existing high-speed routes average a little over 100mph between destinations.

Given the evidence, it seems the Authority is making a very generous assumption that their train will travel the 300 miles between San Fernando and Madera (Merced) in 123-132 minutes; an average speed of 136-146mph.²¹ However for purposes of this example, the Authority's average trip time during the IOS-Only Phase (128 minutes) is used to calculate total travel time.²²

Counting the travel times in minutes – Study Figure 4's options for a potential HSR passenger during the five years of IOS-Only. Compare the elapsed travel-time results of principally using HSR, an auto, bus or airplanes to overcome 'the friction of distance' between the state's largest metropolises.

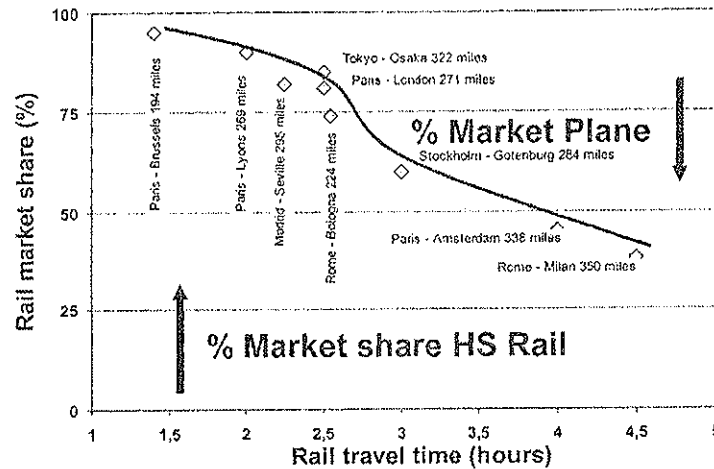
Travel times using the high-speed train during the IOS-Only Period – Figure 4 shows the HSR-based journey between the two metropolitan centers requires at least three separate tickets and four connections.²³ It also assumes the best of all possible conditions, i.e. connection times are not underestimated, all transport modes arrive and depart on time, no HSR security searches are required, estimated travel times are accurate, and each connection is made on time: that is to say the journey proceeds with no waiting or "idle time" before the next scheduled departure (This is a very optimistic assumption as some of these Metrolink and Caltrain departures are once per half hour, or once per hour, especially on off-peak hours and weekends) .

Adding together the increments, if the Norwalk-originated traveler only wished to go downtown San Francisco, he or she must go via the SF Peninsula on Caltrain from San Jose. That journey would be at least eight hours.²⁴ Using HSR, travel time from Norwalk to Berkeley requires at least seven hours if taking the bus between Merced and Oakland. The Norwalk-Berkeley journey, using Caltrain on the SF Peninsula, and then BART, would take at least eight and a half hours.

Figure 2 ²⁵

Distances And Station-To-Station Travel Times On Nine HSR Routes
(Source: Director, HSR – International Union Of Railways/Union Internationale des Chemins des Fer)

How train travel time influences market share



For travel times of 4 hrs or less, HS rail captures
50+% of combined air/rail traffic on a route



Figure 3 – Analysis of Figure 2

Figure 3 Analysis of IUR/UIC Station-To-Station Times And Average Speeds – Station-to-Station –			
Origin and Destination of Nine HSR Routes	Distance (miles)	Travel Time	Average Speed
Paris-Brussels	194	1hr 22min	145mph
Paris-Lyon	269	1hr 56min	136mph
Madrid-Seville	295	2hrs 20min	74mph
Rome-Bologna	224	2. 5hrs	54mph
Tokyo-Osaka	322	2.5hrs	129mph
Paris-London	271	2.5hrs	108mph
Stockholm-Gottenburg	284	3hrs	95mph
Paris-Amsterdam	338	4hrs	85mph
Rome-Milan	350	4hrs 10 min	85mph
Average station to station speed			101mph

<p align="center">Figure 4 Estimated One-Way Elapsed Travel Times of Travel Options During the IOS-Only Phase (2022 - 2026) (Calculations in minutes; totals converted to hours and minutes)</p>									
Point-to-Point Increments	Transit Mode	Travel Times of CHSRA's Offerings ²⁶			Travel Time By Auto		Travel Time Using An Airplane		
		Norwalk to Berkeley – Two Options –		Central LA to San Jose	Norwalk to Berkeley	Central LA to San Jose	Norwalk to Berkeley	Central LA to San Jose	Central LA to Market St. SF
		Via San Francisco	Via Oakland ²⁷	Via Union Station	Owner - operated auto	Driver lives in Central or South LA ²⁸	Via LGB to OAK to Berkeley ²⁹	LAX to SJC then to San Jose center	LAX-SFO to Market Street SF ³⁰
Board + time to departure point ³¹		15	15	15			25	35	35
LGB/LAX Security & Boarding							45	45	45
Norwalk-LA Union Station	Metrolink ³²	30	30						
Connection		5	5	5					
LA Union - San Fernando	CHSRA Bus ³³	37	37	37					
Ticketing & Connection		15	15	15					
San Fernando-Merced	HSR ³⁴	128	128	128					
Connection Only		5	5	5					
Merced-Oakland	CHSRA Bus		160 ³⁵						
Merced-San Jose	CHSRA Bus	150 ³⁶		150					
Flying Time LGB-OAK, LAX-SJC, LAX-SFO ³⁷							59	50	56
Ticketing & Connection		15	15				25	15	15
San Jose To Millbrae	Caltrain	40							
Ticketing & Connection		15							
Millbrae-Berkeley	BART	62							
SFO to SF	BART								33
Oakland-Berkeley	BART ³⁸		16				23		
SJC-San Jose	#10+VTA							35 ³⁹	
Minimum Total Travel Time		8hrs. 37min	7hrs. 6min	5hrs 55 min	6hrs. 13min ⁴⁰	5hrs. 20min ⁴¹	2hrs. 57min	3hrs. 0min	3hrs. 4min

Highway times during the IOS-Only Phase – Of the roughly 100 million annual passenger trips between Southern and Northern California, about nine in ten are made by autos, trucks or busses. Figure 4 shows the driving time between the downtowns of Los Angeles and San Francisco is around six hours, while taking the Megabus is 7 hours and 40 minutes. ⁴² Driving from Norwalk to Berkeley takes six hours and thirteen minutes: Norwalk to San Jose is five hours and twenty minutes.

Travel times using airplanes during the IOS-Only Phase – In every case on Figure 4, travelers looking to ‘cut the time’ use the airlines as their ‘distance killer’ between the LA Basin and the SF Bay Area arrive at either their central city or inner suburb destinations in about three hours.

Conclusions on relative travel times during the IOS-Only Phase – Figure 4 shows that, during the five years of the IOS-Only Phase, potential HSR passengers gain no travel time advantage over either driving times or air travel’s times. Elapsed times of combined flights and ground connections show that airline passengers arrive at their destinations in about half the time as HSR users, and as little as a third the time as CHSRA’s offerings.

Similarly, driving during the IOS-Only Phase has a clear time advantage over HSR-based travel. Between Norwalk and Berkeley, travelers arrive fifty-three minutes quicker than those using the CHSRA Bus from Merced to Oakland, and two hours and twenty minutes quicker than if the traveler is routed through San Jose and San Francisco. Between the centers of Los Angeles and San Francisco, the driver arrives a half hour earlier and doesn't spend more time renting a car. Even the Megabus gets between Los Angeles and San Francisco faster.

Why would any Californian choose to ride use the HSR offering to get between the two regions when they can get there faster by auto and a lot faster using the airplanes during the IOS-Only Phase?

Relative travel costs are the second devil during the IOS-Only Phase

– Would the five years of CHSRA's IOS-Only offerings attract the budget-minded auto or airline traveler because of lower point-to-point costs? Figure 5 has a lot to say about that question.

The travel costs of using the high-speed train during the IOS-Only Period – As Figure 5 shows, choosing the CHSRA's offerings during the IOS-Only Phase to get from Norwalk to Berkeley (or vice versa) fall a few dollars on either side of \$100. Getting from Central City Los Angeles to San Jose would be \$93.25. The onward trip to from San Jose to downtown San Francisco on Caltrain would add another \$9.00.⁴³

The costs of going by highway during the IOS-Only Phase –

Relative to worldwide costs, driving in California is cheap.⁴⁴ During the IOS-Only Phase an auto driver, can drive the 403 miles between Berkeley and Norwalk for under \$61 in gas (a total operating cost of under \$100) and can add family and friends to the family auto for almost no additional cost, something very useful to have in low density California.⁴⁵ Travelers could also take the Megabus between the city centers for \$23-\$34.⁴⁶

But the Authority attempts to paint a very different picture of the costs of traveling by auto. The Authority's approach is highly biased against auto use since its formula adds each passenger's costs equal to that of the driver's costs. This approach purposely ignores the discipline of marginal cost economics, artificially inflates the costs of driving and distorts reality in favor of taking the HSR train. For example, using the Authority's approach and their 2014 range of per mile operating costs; in 2022 a family of four's one-way driving costs for the 340 miles between Los Angeles and San Jose would range between \$300 and \$408 – and for the 380 miles between the centers of San Francisco and Los Angeles would range between \$334 and \$456.⁴⁷ Any driver knows these results are absurd, but the Authority uses that self-promoting conceit to justify using the HSR train during the IOS-Only Phase and thereafter.

The costs of using airplanes during the IOS-Only Phase – As pointed out in a 2012 study on worldwide HSR systems, the profiles of HSR passengers show they are either affluent or reimbursed for their travel expenses.⁴⁸ As Figure 5 shows, using the airlines, a Berkeley to Norwalk journey costs about \$144. Getting from downtown Los Angeles to San Jose is about \$126, to downtown San Francisco about \$133.

Caveat Fidelis (Believer Beware) of CHSRA's airfares – The costs of traveling by air between the two metropolitan areas will always be more expensive than using the HSR option because CHSRA set average airfares between the two cities as their benchmark and their HSR fares 17% cheaper. That approach is by definition tautological – 'heads I win, tails you lose.' This simplistic approach to HSR fares is an excellent marketing tool, but unrealistic. It also creates all sorts of distortions in the Authority's own pricing schemes whereby a third of all fares quoted by CHSRA must be held to no more than 83% of the average airline fares (\$86).⁴⁹

Figure 5
Estimated One-Way Costs For Travel Options During the IOS-Only Phase (2022 - 2026)

Point-to-Point Increments	Transit Mode	Elapsed Times of CHSRA's Offerings			Travel By Auto		Travel Time Using An Airplane		
		Norwalk to Berkeley – Two Options –		Central LA to San Jose	Norwalk to Berkeley	Central LA to San Jose	Norwalk to Berkeley	Central LA to San Jose	Central LA to Market St. SF
		Via San Francisco	Via Oakland ⁵⁰	Via Union Station	Owner - operated auto ⁵¹	Driver lives in Central or South LA ⁵²	Via LGB to OAK to Berkeley ⁵³	LAX to SJC then to San Jose center	LAX-SFO to Market St. SF ⁵⁴
Norwalk - LA Union	MetroLink ⁵⁴	\$7.25	\$7.25	\$0			\$37.00 ⁵⁵	\$20.00 ⁵⁶	\$20.00
LA Union Station - San Fernando	CHSRA Bus ⁵⁷								
San Fernando - Merced	HSR	\$86	\$86	\$86					
Merced - Oakland	CHSRA Bus								
Merced - San Jose	CHSRA Bus								
Airline Fares LGB-OAK, LAX-SJC, and LAX-SFO ⁵⁸							\$104	\$104	\$104
San Jose - Millbrae	Caltrain ⁵⁹	\$7.00							
Millbrae - Berkeley	BART ⁶⁰	\$5.10							
SFO - SF	BART								\$8.65
Oakland - Berkeley	BART		1.85				\$2.50		
SJC - San Jose	#10+VTA							\$3.00	
Minimum Total Costs		\$106.15	\$97.15	\$93.25	\$60.66 to \$98.25	\$52.64 to \$85.25	\$143.50	\$125.85	\$132.65

Conclusions on relative costs of travel – CHSRA has accepted that its fares can't compete in California on a cost basis with auto operating costs, so plans to compete with airline fares: "*Fare levels are . . . somewhat below current airfares in the longer distance travel markets and well above the out-of-pocket cost of driving in the shorter distance travel markets.*"⁶¹ When the costs of driving will only be 70% of the costs of getting between the two central cities, or three-fifths the costs of getting between Norwalk and Berkeley, it will be very hard to pry auto drivers from their seats based on the driver's operating costs relative to the

high-speed rail option. And when a Megabus passenger can get between San Francisco and Los Angeles for a third to half the CHSRA's offering, it will be a difficult 'sell' to budget travelers. During the IOS-Only Phase, CHSRA's ability to deflect travelers from highway travel (nine-tenths of the market) to their offerings is nil, especially if there are also passengers in the auto.

The Berkeley to Norwalk air travel option is about a third to half more expensive than the two IOS-Only offerings if using HSR. The five airlines serving the intra-state market will deeply discount or cross-subsidize fares that will force down high-speed rail's fares.⁶² To get from downtown Los Angeles to downtown San Jose using airplanes will be nearly half (46%) as much more. Using the airplane as a 'distance killer' will cause the San Francisco to Los Angeles traveler to pay about a quarter more than if he or she had used the CHSRA's offering during the IOS-Only Phase. CHSRA's offering may attract some air travelers, who like most riders in Europe's shorter distance markets, are either affluent or reimbursed for their travel expenses: but how many? ⁶³

In 2007, at the peak of the SF Bay Area – Southern California air travel, there were about 10 million journeys between the six Southern California airports and the three SF Bay Airports.⁶⁴ After that air travel declined 17%.⁶⁵ While there is no way to tell how many airline passengers there will be when the IOS-Only Phase begins, 10 million seems possible. However, CHSRA's 2026 ridership forecast for their train of 12.3 million – 28% growth per year and a three-fold increase during the IOS-Only Phase – seems unrealistic, particularly if the Authority assumes many of them will be former airline passengers – as CHSRA must in order to meet their forecasts in Figure 1.

The third devilish detail is the self-inflicted bias of per mile charges in the Central Valley and 'Bookends' – In 2013, the twelve trains of the Central Valley's San Joaquin Amtrak made that line Amtrak's fifth busiest.⁶⁶ North and southbound boardings were 1.57 Million in 2013.⁶⁷

The Authority will eliminate subsidies to riders on the discontinued Central Valley's San Joaquin Amtrak line on HSR (or HST) when IOS-Only Phase's rail service is in place in 2022 – effectively a forced fare increase.⁶⁸ As a recent report on post-subsidized rail fares points out, if a passenger wants to make a short trip on HSR during the IOS-Only Phase, they will face ticket prices per mile up to three to four times per mile of what riders between the metropolitan centers will pay.⁶⁹

This is significant, because in the 2014 Draft Plan, the Authority claims no bias towards short or long haul charges per mile in the fare structure: *"In developing these forecasts, the Authority's consultants have not assumed any revenue optimization that would result from adjusting fares to optimize yields on specific markets such as short distance and commuter trips either in the San Francisco Bay Area and/or in the Los Angeles Basin."*⁷⁰ Yet the opposite is true: local (intraregional) passengers who might consider a HSR ride within the Central Valley, the San Francisco Bay Area and the Los Angeles Basin will pay considerably more per mile than they would on Amtrak, Metrolink or Caltrain.⁷¹

The February 2014 Draft Business Plan has exactly the same fare bias as the 2012 Plan, keeping downtown SF-to-downtown-LA fares low per mile (23¢) while a HSR ride in the Valley or the 'Bookends' will cost 27¢ to \$2.08 per mile.⁷² This is particularly injurious to intra-Central Valley riders who seemingly have no option but to pay 38¢-71¢ per mile, an average rise of 38% above what they pay now on the San Joaquin line. But they do have other options to travel inside the Valley and to Los Angeles by driving or carpools.

Inside the Valley, HSR will always be the travel time winner. A driver can cover the 164 miles between Valley's northern and southern terminuses (Merced and Bakersfield) in 2 hours and 36 minutes: the Amtrak ride takes three quarters of an hour more.⁷³ HSR's predicted travel times vary between an hour and an hour and fifteen minutes.⁷⁴ CHSRA's quicker, non-stop trains will fly through Fresno, Hanford, Visalia, and other Valley towns at 164mph: the slower, two stop trains will average 131mph. No contest.

Between Merced and Los Angeles the HSR train also wins the travel time race. Today's Amtrak train and bus journey takes five and a half hours.⁷⁵ The driving time is an hour less – 4 hours and 26 minutes. That's still an hour and a half longer than taking the high-speed train and the Metrolink connection.⁷⁶

But does the HSR train win the price competition? Between Merced and Bakersfield the Amtrak ticket is \$48 (Flexible fare is \$26).⁷⁷ The HSR ride would be 35% more (\$65).⁷⁸ In the Valley, Amtrak passengers' today pay about 54% of the San Joaquin Line's operating costs: i.e. their tickets are subsidized 46%.⁷⁹ Many if not most of today's 1.57 million (Figure 1) Amtrak riders will find alternatives to paying the increased HSR rail prices since Amtrak travelers aren't riding Amtrak for speed. They like the to-be-discontinued subsidized fares.

Driving the 280 miles between Merced and Los Angeles is cheaper than the HSR + Metrolink ride offered in the IOS and B2B phases. The gasoline cost of driving between the two is \$42: the full costs of driving would be about \$70.⁸⁰ The CHSRA fare between the two is \$86.⁸¹ When families, friends or employers consider that the driver could take three to four passengers between Merced and Los Angeles for \$70, driving becomes the 'slam dunk' option.

How does the Authority expect attract Central Valley travelers to join them, or 'Bookends' commuters to abandon their subsidized fares when driving is cheaper and HSR fares will be so much higher than today's subsidized fares?

The fourth, but still unquantifiable, devil emerges from the 'HSR-unfriendly' urban structure of California's two metropolises. A recent scholarly paper pointed out the fragility of assuming the urban core of San Francisco and Los Angeles would be able to supply HSR passengers like Barcelona and Madrid.⁸² The authors point out that; "*HSR has proved to work best in populous, dense, and mono-centric urban centers, such as Paris and Tokyo*"⁸³ Neither the Bay Area nor Los Angeles can be classified as having densely populated urban centers. Being spread out makes it difficult for public

transit development, when the ". . . radius of a catchment area of transit stations, [should] be less than 400 meters." and HSR for inter-urban trips should have ". . . a catchment area of 1.5 – 5 kilometers . ." [i.e. 0.9-3 miles].⁸⁴ That poses a very large challenge for travelers to get to stations served by HSR.

Nor are LA and SF mono-centric: their employment centers are scattered around their metropolitan areas, stymieing the development of transit to feed passengers to high-speed train stations. In fact "*Los Angeles is the prime example of a polycentric city*" where urban analysts, "*identified 36 employment center in 1990 and 48 in 2000.*" and "*The Bay Area is only slightly less polycentric . . . with 22 employment centers.*"⁸⁵

Reinforcing the difficulty of attracting passengers from polycentric cities, the authors say, ". . . population centers do not coincide with employment centers or the areas with relatively high incomes in the California cities."⁸⁶ They also say "*Business trips usually take up a significant proportion of HSR trips. Many business trips originate or terminate at office district destinations where employment concentrates.*"⁸⁷ Much has been made of 200-350 mile high-speed rail journeys in Europe taking market share from air travel, such as the Madrid-Barcelona AVE train.⁸⁸ But as pointed out in a 2012 book, those two-to-four hour trips are on high-speed rail systems (HSR) that not only don't make profits, but most passengers are reimbursed for their ride.⁸⁹ Without either the wealthy downtowns, or easy access to HSR by reimbursed travelers, attracting the numbers of riders shown in Figure 1 becomes even more questionable.

California's high-income areas' populations, needed to pay non-subsidized fares, are not in the central cities. And while the paper on urban structure and density's conclusions are as yet unquantifiable, the findings should give pause to optimistic forecasting of ridership and revenue for HSR in California.

Conclusions on the promise of high-speed rail at the conclusion of the IOS-Only Phase

– The Draft 2014 Business Plan says that the IOS will demonstrate "*Ridership and revenues sufficient to attract private capital for expansion.*"⁹⁰ This will come will come because the project moves ". . . to complex long-term concession agreements with under-lying private capital investment."⁹¹ In short, private investors are to raise at-risk funds to buy a concession that will produce enough revenue to both operate the IOS trains profitably and simultaneously invest as much as \$20 billion to build the Bay to Basin (B2B) infrastructure.⁹² Since all of this is to be done without the State providing an operating subsidy as prohibited by AB3034, this is the definition of capital-at risk.

Potential private investors will ask why should they invest if there are no time or cost advantages for the roughly ninety million auto travelers during the IOS-Only Phase to defect to the CHSRA's offerings. They will also ask whether air travelers – many, if not most, of who are on business trips between the metropolises – would choose a round-trip of 10-17 hours versus six hours door-to-door, especially since their costs are likely reimbursed.

They will see that, unlike the Golden Gate Bridge's use of revenue bonds, there has never been at-risk money put into the project – not since its inception and not in the 15 years (2012-2026) since the Legislature agreed to match federal funds. They will know that the Authority's own consultants told them in 2008 and 2009 that there would be no private money in the project unless there was an illegal subsidy – euphemistically called a 'revenue guarantee.'⁹³ But most importantly they will see the evidence presented here that challenges the Authority's ridership claims in Figure 1 and ask themselves whether those forecasts are realistic enough to risk their personal savings and their client's savings to pay billions of dollars for a concession.

The Bay-to Basin Phase won't improve demand for the Authority's offerings much either – When and IF the CHSRA finds yet another \$20 Billion – a total of \$51 Billion – to build onward north and west of Fresno to San Jose, the Bay to Basin Phase of the program will be completed.⁹⁴ CHSRA forecasts it will have the San Fernando to San Jose portion of their system ready by 2027.

Figure 6
Estimated One-Way Elapsed Travel Times of Travel Options During the Bay to Basin Phase (2022 - 2026)
 (Calculations in minutes: totals converted to hours and minutes)

Point-to-Point Increments	Transit Mode	Travel Times of CHSRA's Offerings ⁹⁵			Travel Time By Auto		Travel Time Using An Airplane		
		Norwalk to Berkeley – Two Options –	Central LA to San Jose		Norwalk to Berkeley	Central LA to San Jose	Norwalk to Berkeley	Central LA to San Jose	Central LA to Market St. SF
		Via San Francisco	Via Oakland ⁹⁶	Via Union Station	Owner - operated auto	Driver lives in Central or South LA ⁹⁷	Via LGB to OAK to Berkeley ⁹⁸	LAX to SJC then to San Jose center	LAX-SFO to Market Street SF ⁹⁹
Board + time to departure point ¹⁰⁰		15	15	15			25	35	35
LGB/LAX Security & Boarding							45	45	45
Norwalk-LA Union Station	Metrolink ¹⁰¹	30	30						
Connection		5	5	5					
LA Union - San Fernando	CHSRA Bus ¹⁰²	37	37	37					
Ticketing & Connection		15	15	15					
San Fernando – San Jose	HSR	154		154					
San Fernando-Merced	HSR ¹⁰³		128						
Connection Only			5						
Merced-Oakland	CHSRA Bus		160 ¹⁰⁴						
Flying Time LGB-OAK, LAX-SJC, LAX-SFO ¹⁰⁵							59	50	56
Ticketing & Connection		15	15				25	15	15
San Jose To Millbrae	Caltrain	40							
Ticketing & Connection		15							
Millbrae-Berkeley	BART	62							
SFO to SF	BART								33
Oakland-Berkeley	BART ¹⁰⁶		16				23		
SJC-San Jose	#10+VTA							35 ¹⁰⁷	
Minimum Total Travel Time		6hrs. 28min	7hrs. 6min	3hrs 46 min	6hrs. 13min ¹⁰⁸	5hrs. 20min ¹⁰⁹	2hrs. 57min	3hrs. 0min	3hrs. 4min

Will would-be travelers use the B2B? The evidence is in Figure 6, where costs were found to remain the same as during the IOS-Only Phase, and only HSR-based travel times change.

The B2B's only significance to the traveler is the HSR service between Fresno and San Jose. The Authority says that the total travel time of the CHSRA's offering between San Fernando and San Jose ranges from 151-157 minutes, an average of 154 minutes.¹¹⁰ Given the exegesis of climbing and descending Pacheco Pass with HSR's constrained grades, and maintaining an average speed of about 150mph, that would be remarkable.

That increased speed of getting from the Central Valley to San Jose seems to be the sole benefit of spending another \$20 Billion.¹¹¹ If true, that speed would bring the advantage that during the Bay to Basin Phase (B2B), HSR travelers between Central Los Angeles to San Jose arrive in 3 hours and 51 minutes, cutting a quarter of the time off a auto journey and a third off the travel time by HSR during the IOS-Only Phase. That may be attractive to some auto drivers without passengers, but likely only so if they do not need to rent a car at their destination. Otherwise, all airline-based itineraries and their connections to the Bay Area are still quicker.

Conclusions at the end of the IOS-Only and Bay to Basin phases – Given the paucity of either travel time or cost advantages, where are more than 17 million forecasted riders by the end of the B2B Phase – a more than four fold increase in seven years – supposed come from?¹¹²

Time-sensitive business passengers for those IOS and B2B years certainly won't abandon the airlines to spend more time getting between California's metropolitan areas. Even at the close of the B2B phase, air-based travel is still faster to any of the destinations than HSR-based travel – about three hours or less compared to almost four to six hours for the best HSR-based options. The business riders, i.e. the less-price sensitive market segment, won't find comfort in a lower-than-airfare-based ride from CHSRA's offering in either phase since most of them are reimbursed for their travel expenses. Time matters to them, particularly if it is 'face time' with customers or time at home.

Some travelers will want the experience of a combination of transit rail, a HSR, buses, and commuter rail to get between city centers, or nearer their home base. But the inconvenience alone of so many connections (up to six) to get to or from Disneyland or Berkeley will put off many, if not most families traveling with children to even the B2B's offerings; particularly if they know that California's urban sprawl demands a rental car. Similarly, families will ask what's the HSR advantage through the B2B phase when they can drive all three or four of them round-trip for under \$200, versus about \$700 for transit and HSR train tickets?¹¹³ That \$500 difference is money in their pockets.

If reimbursed business travelers are unlikely to use the HSR system in its first seven years, and families with children are also unlikely HSR travelers, the Authority's ridership (and therefore revenue) figures are suspect. One could conclude that the main purpose of the HSR system may be to serve reimbursed government employees. Even if that were the purpose, the system would likely serve only less than four million riders per year; far below the 17 million forecasted for end of the B2B Phase in 2028.¹¹⁴

On the face of it, the Authority's offerings through the seven years of IOS and B2B are unattractive to both those not being reimbursed for their trip and those dependent on the time-efficiencies of California's airline-based travel. That makes the Authority's ridership projections – 4.6 million in 2022 and 17.4 million in 2028 – highly suspect.

The promise of someday having high-speed service operating between the metropolitan centers is enticing. But in practical terms, for their combined seven-year history the IOS-Only and the B2B phases have little to offer the middle income or the budget minded, the wealthy or the reimbursed traveler. People don't choose inconvenience and higher costs today for a promise of a better tomorrow. They have and will have better travel time or price options for travel inside California by 2022 and more in 2029. That is the definition of progress.

Un-kept promises are the Authority's hallmark – Set aside for a moment the hosts of unfulfilled promises the Authority has made about the costs, start times and other aspects of California's high-speed rail system.¹¹⁵ Now the Authority's 2014 Business Plan promises to have the at least 151 miles of high-speed capability between Fresno and San Jose operational in 2027 – seven years after opening the IOS.¹¹⁶ It also promised that two years later (2029) the truncated promise to voters, fictionally portrayed by the Authority as 2008's Phase 1, would be operational.¹¹⁷ In 2008 the Authority told would-be travelers they could get between the downtowns of San Francisco and Los Angeles for about \$50 and be there in two hours and forty minutes. It also said the entire Phase 1 would cost about \$33 Billion, and by 2011 the Authority said the entire Phase 1 would be operational by 2033 (now postponed).¹¹⁸ During the IOS and B2B phases, the train was also supposed to help improve the environment, but won't.¹¹⁹ In 2008 the Authority and the Legislature promised there was no need for an operating subsidy, yet that too has been rescinded.¹²⁰ Promises were made: few were kept.

The Authority's ridership and revenue forecasts for the IOS or B2B phases have not, and will not, convince private, at-risk capital to invest – Anyone seeking private capital knows that the risks of a new service are very high: the principal one being the presence of competitors, i.e. the 'survivors' serving the same market. Investors know that too. If customers already have other choices, such as the airlines or inexpensive auto travel for as long as seven years, a 'second chance' would be very rare. Even if a HSR launch happens, competitors will cut prices or offer enhanced services – or both. Then there are 'disruptive technologies' – think of seven years ago (2007) when there was no Tesla, Facebook or Twitter, no self-driving car, no ride sharing or other 'disruptive' transportation or communication technologies. In less than a decade these and other offerings have changed way we communicate. By 2022 or 2029 more 'disruptive' changes are likely; but the Authority's HSR offerings would be still be dependent on a single route in a fixed rail system.

No private capital has been forthcoming in the nearly two decades the project has been publically discussed. There's a good reason for that; and this analysis has shown why. Neither the IOS, nor the B2B phase offers many travelers the clear time or cost advantages that might produce enough revenue to attract

private, at-risk capital to pay back its shareholders and invest in further extensions of HSR service. Nor is private, at-risk capital likely to be forthcoming.

The entire HSR project's rationale: profitable, environment-friendly, more rapid and cheaper travel between San Francisco and Los Angeles' downtowns, becomes unhinged by starting high-speed rail's role in transporting Californians with the IOS-Only Phase as the only offering, and only adding a quicker ride to San Jose in the next, B2B, phase. Launching high-speed rail into the headwinds of market-tested airline operations and relatively very cheap auto travel – both being competitive forces the Authority cannot influence – without unassailable costs and/or travel time advantages is a receipt for rapid financial failure.

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END NOTES TO 'IF YOU BUILD IT THEY WILL NOT COME'

¹ On the subject of a private operator, Exhibit 1.1, page 16 of the California High-Speed Rail Draft 2014 Business Plan says the IOS will have a private sector operator and will produce revenues sufficient to attract private capital. On the subject of not needing an operating subsidy, the Draft 2014 Business Plan, Exhibit 6.3 PSF 52, broaches the subject of a \$50M operating subsidy during the ramp-up period. However, the requirements of AB3034, Section 2704.08 (c) (2) (J) and Section 2704.08 (d) (2) (D) are the train cannot have an operating subsidy. No mention is made of allowing an operating subsidy during the ramp-up period, and this requirement assumes no return on the capital grants from Federal or State of California sources. On the subject of travel times between the downtowns of San Francisco and Los Angeles, the California High-Speed Rail Draft 2014 Business Plan Ridership and Revenue Forecasting—Draft Technical Memorandum, Appendix A, PDF 70 shows that the fastest trains between the downtowns of SF and LA when the Phase 1 is eventually finished will require 180 minutes, which is three hours – not the 2 hours 40 minutes promised voters in 2008.

² AB3034 Section 9, Article 2 (5) says; "*Revenues of the authority, generated by operations of the high-speed train system above and beyond operating and maintenance costs and financing obligations, including, but not limited to, support of revenue bonds, as determined by the authority, shall be used for construction, expansion, improvement, replacement, and rehabilitation of the high-speed train system.*"

³ Eric T. Wagner, "Five Reasons 8 out of 10 Businesses Fail" *Forbes*, September 12, 2013.

⁴ By July 2001, after just two years in business, Webvan had spent just about all of the \$1.2 billion put up by investors. See: <http://www.venturenavigator.co.uk/content/153>. Founded in 1998, and backed by Amazon.com, Pets.com raised \$82.5 million in a February 2000 initial public offering. Within 18 months, nearly all was lost. See: <http://news.cnet.com/2100-1017-248230.html>. Solyndra received a \$536 million U.S. Energy Department loan guarantee before going bankrupt. See: <http://en.wikipedia.org/wiki/Solyndra>

⁵ See: California High-Speed Rail Draft 2014 Business Plan, PDF 42

⁶ See: California High-Speed Rail Draft 2014 Business Plan Ridership and Revenue Forecasting—Draft Technical Memorandum, Figure 3.1 [PDF 25]. Estimates for 2022 and onwards are from Exhibit 4.2 [PDF 43] of the 2014 Draft Business Plan.

⁷ Exhibit 4.1 [PDF 42] of the 2014 Draft Plan shows that by 2030, a year after the Bay-to-Basin is operational (as shown in Figure 3.2 PDF 26 of Cambridge Systematics' Technical Memorandum, Ridership and Revenue Forecasting), the Medium Ridership estimate on the IOS will be 24.4 million.

⁸ For 2013 ridership on the San Joaquin line, see; Tim Sheehan, Fresno Bee, October 14, 2013

⁹ "Amtrak's San Joaquin trains set ridership record. Found at <http://www.fresnobee.com/2013/10/14/3553276/amtraks-san-joaquin-trains-set.html>

⁹ Estimates for 2022-2024 are from Exhibit 4.2 [PDF 43] of the Draft 2014 Business Plan

¹⁰ See: California High-Speed Rail Draft 2014 Business Plan Ridership and Revenue Forecasting—Draft Technical Memorandum, PDF 24 and PDF 25

¹¹ See Exhibit 4.1 [PDF 42] of the Draft Plan

¹² Amtrak San Joaquin ridership 2012-2013 growth was 6.6%. The compound growth rate of 6.6% was used to forecast growth 2013-2021.

¹³ See: California High-Speed Rail Draft 2014 Business Plan Ridership Exhibit 4.1 [PDF 42] and the Revenue Forecasting—Draft Technical Memorandum, PDF 24 and PDF 25.

¹⁴ The California High-Speed Rail Draft 2014 Business Plan Ridership and the Revenue Forecasting; Draft Technical Memorandum, Figure 3.3 [PDF 27] shows that Phase 1 HSR Service terminates at LA Union Station, where riders connect to Metrolink, and in the north in San Francisco in Phase 1. Terminating at LA Union Station violates 2008's promise that had HSR serving Anaheim and subsequent Business Plans through 2011.

¹⁵ Norwalk and Berkeley, both considered inner radius suburbs of their central city, are roughly equal distances (15 miles) from Los Angeles Union Station and the SF TransBay Center respectively. A 2004 study suggests the market catchment area of Amtrak to be a 25 miles radius. See: T.R. Leinbach, City Interactions: The Dynamics of Passenger and Freight Flows, in Hansen & Giuliano; *The Geography of Urban Transportation* (pp. 30-58). NY: Guilford Press.

¹⁶ C. Zhong, G. Bel, M. Warner; High-Speed Rail Accessibility: What Can California Learn from Spain; 2013

¹⁷ On PDF 98 of the 2014 Draft Business Plan, the August 14, 2013 Peer Review Report says; "... it is unlikely that trains would actually be scheduled to run during normal hours of operation within the 30 minute or 2 hours 40 minute limits at the completion of the Phase I Blended system."

¹⁸ See: California High-Speed Rail Draft 2014 Business Plan, page 3 [PDF 3]

¹⁹ The non-stop Thalys, departing Paris at 8:25am, arrives in Brussels at 9:47am, a journey of 1 hour 22 minutes. The economy ticket price is US60¢ per mile. Found at: <http://www.raileurope.com/index.html>

²⁰ This calculation allows 5 minutes for deceleration and connection at two stations. See: <http://www.japan-guide.com/e/e2018.html> Tokyo-Osaka, a longer route, with an average of 129mph would increase its average speed only to 138mph if deceleration and acceleration for the Nagoya and Kyoto stops were not counted.

²¹ See: California High-Speed Rail Draft 2014 Business Plan Ridership and Revenue Forecasting—Draft Technical Memorandum, Appendix A [PDF 68]. The center of the page table shows 'HSR Patterns' Merced to San Fernando (Sylmar) Run Times to range from 123 to 132 minutes, which over the 300 miles of the IOS equates to speeds of 133mph to 150mph.

²² In the CHSRA 2014 Draft Plan's Ridership and Revenue Technical Memorandum [PDF 68], it also says that a transfer time takes 15 minutes. Assuming that connection time includes ticketing, this is used in travel time calculations only when changing transport modes; i.e. from Metrolink to HSR, bus to Caltrain and Caltrain to BART (or vice versa). Same mode connections are five minutes. While this seems minimal, Amtrak assumes it and 5 minutes is used. See: <http://tickets.amtrak.com/itd/amtrak>.

²³ The Pacific Surfliner web site gives a five-minute interval to disembark in LA Union and board the next train. While this seems minimal, it is used. See: <http://tickets.amtrak.com/itd/amtrak>. Metrolink fares and times are at: <http://www.metrolinktrains.com>. The Caltrain Baby Bullet schedule shows a station to station time between San Jose Diridon and San Francisco's Fourth and King Street station to be 1 hour and 7 minutes. BART timetables are at: <http://www.bart.gov/schedules/bylineresults?route=7&date=02/18/2014>.

²⁴ The traveler at San Jose who wishes to go to downtown San Francisco could take Caltrain's 1 hour and 7 minute Baby Bullet train to 4th and King Street, San Francisco.

²⁵ Iñaki Barron de Angoitia, Director of High Speed Rail at the International Union of Railways/UIR, presented this chart to the US Congress On April 19th 2007. See: International High-Speed Rail Systems: a Hearing before the Subcommittee on Railroads, Pipelines and Hazardous Materials of the Committee on Transportation and Infrastructure, House of Representatives; April 19, 2007, at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_house_hearings&docid=f:34799.pdf.

²⁶ Norwalk and Berkeley, both considered inner radius suburbs of their central city, are roughly equal distances (15 miles) from Los Angeles Union Station and the SF TransBay Center respectively. A 2004 study suggests the market catchment area of Amtrak to be a 25 miles radius. See: T.R. Leinbach, City Interactions: The Dynamics of Passenger and Freight Flows, in Hansen & Giuliano; *The Geography of Urban Transportation* (pp. 30-58). NY: Guilford Press.

²⁷ This option assumes the passenger goes from Merced to Oakland by CHSRA bus service, then to Berkeley by BART

²⁸ Assumes the driver lives in Downtown LA, Huntington Park or South Los Angeles, a 15-minute drive to pass near LA Union Station on or entering Hwy 5.

²⁹ The airport nearest Norwalk is Long Beach (LGB) – 12 miles. See: <http://www.travelmath.com/nearest-airport/Norwalk,+CA>. Driving time is 20 minutes. Prime Time Shuttle is scheduled pick-up. See <https://primetimeshuttle.hudsonltd.net/res>

³⁰ The San Francisco TransBay Center (SFTBC) is supposed to substitute for the Caltrain Terminal at from 4th and King Street. While SFTBC is scheduled to be completed in the fall of 2017, five years before the IOS is completed, the IOS funding does not include a connection to the SFTBC. See: <http://transbaycenter.org/construction-updates/project-schedule>

³¹ Driving time to the Norwalk/Santa Fe Springs Metrolink station is assumed to be 5 minutes, connection time another 5 minutes

³² Travel times for the 10 daily Metrolink trains (5am-5:33pm) between the Norwalk/Santa Fe Springs Station to LA Union Station vary between 27 and 37 minutes; the average being 30.2 minutes. See:

http://www.metrolinktrains.com/schedules/line/name/Orange%20County/service_id/1152.html
Amtrak does not stop at the Norwalk/Santa Fe Springs Station.

³³ PDF page 25, Figure 3.1 of the 2014 Draft Plan, Cambridge Systematics' Technical Memorandum, Ridership and Revenue Forecasting, shows that during the IOS-Only Phase, there will be a Dedicated Bus Connection between LA Union Station and San Fernando. Travel time is 37 minutes per page A-1 [PDF 68] of the 2014 Draft Plan, Cambridge Systematics' Technical Memorandum, Ridership and Revenue Forecasting .

³⁴ Assumes the average 2014 Plan's Merced-San Fernando run times (123-132 minutes); See the HSR Patterns table on page A-1 [PDF 68] of the 2014 Draft Plan, Cambridge Systematics' Technical Memorandum, Ridership and Revenue Forecasting.

³⁵ This is by CHSRA dedicated bus. Travel time is 160 minutes per page A-1 [PDF 68] of the 2014 Draft Plan, Cambridge Systematics' Technical Memorandum, Ridership and Revenue Forecasting.

³⁶ This is by CHSRA dedicated bus. Travel time is 150 minutes per page A-1 [PDF 68] of the 2014 Draft Plan, Cambridge Systematics' Technical Memorandum, Ridership and Revenue Forecasting.

³⁷ Flying times: LGB-OAK, See: <http://www.travelmath.com/flying-time/from/Long+Beach,+CA/to/Oakland,+CA> For LAX-SJC, see: <http://www.travelmath.com/flying-time/from/LAX/to/SJC> For LAX-SFO, see: <http://www.travelmath.com/flying-time/from/LAX/to/SFO>

³⁸ BART from Oakland Lake Merritt to Downtown Berkeley takes 16 minutes and Oakland Coliseum to Downtown Berkeley takes 23 minutes. See:

<http://www.bart.gov/schedules/bylineresults?route=3&date=03/02/2014>

³⁹ Assume from the aircraft's landing to the free Airport Shuttle bus takes 15 minutes. The No. 10 VTA Bus takes 10 minutes from SJC to the Santa Clara Transit Center. See:

<http://www.vta.org/routes/rt10>. From there it connects with Caltrain to San Jose Diridon station, which takes 9-10 minutes. Counting connections, SJC to downtown takes approx. 35 minutes.

⁴⁰ For Norwalk to Berkeley driving times see: <http://www.travelmath.com/driving-time/from/Norwalk,+CA/to/Berkeley,+CA> .

⁴¹ For Central Los Angeles to San Jose city center is 5hrs. 20 minutes see:

<http://www.travelmath.com/driving-time/from/Norwalk,+CA/to/San+Jose,+CA>

⁴² The Stagecoach Group owns Megabus. Megabus.com lists four daily services between San Francisco and Los Angeles. See: <http://us.megabus.com>. Travelmath.com says the driving distance is 381 miles, and driving time is 5 hours 59 minutes. See:

<http://www.travelmath.com/driving-time/from/San+Francisco,+CA/to/Los+Angeles,+CA>

⁴³ Total costs between the SF and LA's central cities would be \$102.25. For Caltrain fares, see: <http://www.caltrain.com/Fares/farechart.html>

⁴⁴ Comparing an auto's operating costs to a rail trip during the IOS-Only Phase is relevant because HSR also has capital and maintenance costs. The main operating cost of an auto is gasoline. Compared with five nations with sizeable HSR systems, California's gasoline is cheap. Gas in the UK is 92% more expensive than the US, Japan's 74% higher, France's 62% higher, Germany's 49% and Spain's 20% higher. This comparison is important because it demonstrates the relative attractiveness of HSR to California's auto drivers versus HSR relative to drivers in the five other (HSR) markets. See: http://www.nationmaster.com/graph/ene_gas_pri-energy-gasoline-prices

⁴⁵ Based on gasoline costs, the website, travelmath.com, computes the costs of the 393 miles using gas mileage at 25mpg, gas prices at \$3.859, for a total price of \$60.66. See: <http://www.travelmath.com/cost-of-driving/from/Norwalk,+CA/to/Berkeley,+CA>. Table 4.4 in Cambridge Systematics Technical Memorandum on Ridership and Revenue Forecasting to the 2014 Plan [PDF 33] says the costs of a driver-only trip would be \$98.25-an average of 25¢/mile. What the Plan does not say is that the auto, SUV, van or truck could hold more than one passenger plus the driver, and that their costs are 'fully loaded' (incorporating insurance, maintenance, etc. costs). The 'gasoline only' cost to drive the 381 miles between central SF and central LA is \$58.87. See: <http://www.travelmath.com/cost-of-driving/from/San+Francisco,+CA/to/Los+Angeles,+CA>. The 'gasoline only' cost to drive the 341 miles between central LA and San Jose is \$52.69. See: <http://www.travelmath.com/cost-of-driving/from/San+Jose,+CA/to/Los+Angeles,+CA>. The Authority's 'fully loaded' cost for a driver-only auto trip would be \$85.25.

⁴⁶ The Stagecoach Group owns Megabus. Megabus.com lists two fares between the downtowns of San Francisco and Los Angeles. See: <http://us.megabus.com>.

⁴⁷ Why is the Authority's approach biased? The Draft 2014 Plan's Final Technical Memorandum – Ridership and Revenue Forecasting, page 4-4 [PDF 33] says, "The approach for forecasting auto operating costs for the 2014 Business Plan is consistent with the methodology used for the 2012 Business Plan, with updates to the cost projections." The range of auto operating costs per mile in

the 2014 Draft Plan [Table 4.4 –PDF 33] is 22¢-30¢. However, in 2012 Business Plan's Final Technical Memorandum – Ridership and Revenue Forecasting; at the bottoms of Table 5.9 and Table 5.10 [PDF 55-56] are the notes. "Auto Operating Cost = 20 cents per mile per person (2011\$)." and "Auto Operating Cost = 28 cents per mile per person (2011\$)." The per-mile range of costs, 22¢- 30¢ are reasonable, and for a driver-only trip yield a 403-mile driving cost range of \$89-\$121. However, as opposed to applying the financial concept of marginal costs in the costs of driving formula, one is supposed to believe that the auto driver costs, and costs for each of three passengers should be defined to be equal. Therefore, an 403-mile auto trip between Norwalk and Berkeley with four occupants' one-way would have costs in 2022 range between \$355 (4 times \$89) and \$484 (4 times \$121). The consequence for the auto trip example is that the fixed costs must absorbed three more times – truly an ill-logical approach. The apples-to-apples equivalent would be to have each additional high-speed rail passenger absorbing the entire fixed and variable costs as is the first traveler – i.e. the locomotive's driver.

⁴⁸ Daniel Albalade, and Germà Bel in, The Economics and Politics of High-Speed Rail; Lessons From Experiences Abroad, page xiii (Lexington Books, 2012) showed that most HSR passengers are those who "travel for business reasons and whose ticket (the amount of which is far from covering the total cost of the service) is paid for by their employers."

⁴⁹ See: California High-Speed Rail Draft 2014 Business Plan Ridership and Revenue Forecasting—Draft Technical Memorandum, Table 3.1, page 3-5 [PDF 28].

⁵⁰ This option assumes the passenger goes from Merced to Berkeley by CHSRA bus service

⁵¹ The website <http://www.travelmath.com/cost-of-driving/from/Norwalk,+CA/to/Berkeley,+CA> says that assuming 25mpg, and the cost of gasoline at \$3.859, the "gas only" one-way cost of driving is \$60.66, at 15.4 cents per mile. The Authority's "fully loaded" one-way cost of driving is \$98.25. See PDF page 33, Table 4-4 on page 4-4, of the 2014 Draft Plan, Cambridge Systematics' Technical Memorandum, Ridership and Revenue Forecasting, at an average of 25 cents per mile. Note: This "Auto" could hold from 1 to 4 passengers.

⁵² Assumes the driver lives in Downtown LA, Huntington Park or South Los Angeles, a 15-minute drive to pass near LA Union Station on or entering Hwy 5.

⁵³ The San Francisco TransBay Center (SFTBC) is supposed to substitute for the Caltrain Terminal at from 4th and King Street. While SFTBC is scheduled to be completed in the fall of 2017, five years before the IOS is completed, the IOS funding does not include a connection to the SFTBC. See: <http://transbaycenter.org/construction-updates/project-schedule>

⁵⁴ Metrolink fares are from <http://www.metrolinktrains.com/ticketspricing/>. All Metrolink fares are 'Regular Fare' prices. Other ground transport modes are noted.

⁵⁵ Prime Time Shuttle is a privately offered pick up at a residence or business service. See <https://primetimeshuttle.hudsonltd.net/res>

⁵⁶ See: <https://shuttletolax.com/reservations/SELDEP>

⁵⁷ PDF page 28, Table 3.1 of the 2014 Draft Plan, Cambridge Systematics' Technical Memorandum, Ridership and Revenue Forecasting, shows that during the IOS-Only Phase, the maximum fare will be \$86.

⁵⁸ The maximum price of a one-way HSR ticket was set at 83% of the average airline fare (\$86). However, the website Expedia says, airline fares for a one-way fare on the day of travel were: LGB-OAK, \$138. For LAX-SJC, \$199. For LAX-SFO, \$204. See: <http://www.expedia.com/Flight-Search->

⁵⁹ See: <http://www.caltrain.com/Fares/farechart.html>

⁶⁰ See: <http://www.bart.gov/tickets/calculator>

⁶¹ See: California High-Speed Rail Program Revised 2012 Business Plan, April 2012, page 5-11 [PDF 119]

⁶² In the CHSRA's Draft 2014 Business Plan, the SF-LA fare is set at \$86 – 83% of the average annual fares between airports in Los Angeles Basin and the SF Bay Area. Using an average distance between SFO and LAX, (338 miles), BUR (327 miles), SNA (372 miles), the airline charge works out to about 25\$ per mile. On February 10th 2014, Virgin America, American Airlines, United Airlines and US Airways offered a two week advance purchase one-way, February 24th LAX-SFO ticket for \$58. Southwest Airline's was \$59.

⁶³ Op Cit. Albalade, and Bel, The Economics and Politics of High-Speed Rail; Lessons From Experiences Abroad

⁶⁴ The six southern ones were Burbank (BUR) Los Angeles International (LAX), Long Beach (LGB), Ontario (ONT), Palm Springs (PSP), Orange County-Santa Ana (SNA) and San Diego (SAN). The Bay Area airports were Oakland (OAK), San Francisco International (SFO) and San Jose (SJC).

⁶⁵ See: California High-Speed Rail 2012 Business Plan, final technical Memorandum, prepared for Parsons Brinckerhoff for the California High-Speed Rail Authority, prepared by Cambridge Systematics, Inc. *Ridership and Revenue Forecasting*, Appendix B, Table 1, page 10, [PDF 116] of, *Potential Airline Response to High-Speed Rail Service in California*, prepared by Aviation System Consulting, LLC August 2011, Prepared for Cambridge Systematic, [Sic] Inc.

⁶⁶ The Fresno Bee, December 2, 2013; Tim Sheehan, Amtrak's San Joaquin Valley trains see record ridership: Found at <http://www.fresnobee.com/2013/12/02/3644370/amtraks-san-joaquin-trains-see.html#storylink=cpy>

⁶⁷ Source: National Railroad Passenger Corporation (Amtrak)

⁶⁸ See PDF 43, CHSRA, Draft 2014 Business Plan, February 7 2014. Also, Cambridge Systematics' (CS) final technical memorandum of Ridership and Revenue Forecasting of April 12, 2012, Section 5.2, page 5-5 [PDF pg. 37] says "Note that the existing San Joaquin service south of Merced to Bakersfield is assumed to be discontinued upon the initiation of HST service." The Draft 2014 Plan is silent on discontinuing or continuing the subsidized Amtrak service.

⁶⁹ See 'Fleecing' Local High-Speed Train Riders While Big City Executives Ride Cheaper: A Briefing Paper, January 29, 2014; found at www.sites.google.com/site/hsrcaiff/home/briefing-papers/01-2014-fleecing-local-high-speed-train-riders.

⁷⁰ See PDF 43, CHSRA, Draft 2014 Business Plan, February 7 2014

⁷¹ William Grindley and William Warren, 'Fleecing' Local High-Speed Train Riders While Big City Executives Ride Cheaper: A Briefing Paper, January 29, 2014; found at www.sites.google.com/site/hsrcaiff/home/briefing-papers/01-2014-fleecing-local-high-speed-train-riders

⁷² In a back-handed recognition of this highly cynical approach, the Authority says: "The consultants have assumed the same high-speed rail fare structure as assumed in the 2012 Business Plan forecasts and presented in the Draft 2014 Business Plan Ridership and Revenue Technical Memorandum." The Technical Memorandum is available at:

http://www.hsr.ca.gov/About/Business_Plans/Draft_2014_Business_Plan.html

⁷³ Driving time is at <http://www.travelmath.com/driving-time/from/Bakersfield,+CA/to/Merced,+CA>. The Amtrak ride is 3 hours and 10 minutes See: <http://tickets.amtrak.com/itd/amtrak>

⁷⁴ See: 2014 Draft Plan, Cambridge Systematics' Technical Memorandum, Ridership and Revenue Forecasting, page A-1 HSR Patterns [PDF 68].

⁷⁵ See: <http://tickets.amtrak.com/itd/amtrak>

⁷⁶ To go the 280 miles takes 4hrs. 26 minutes. See: <http://www.travelmath.com/driving-time/from/Merced,+CA/to/Los+Angeles,+CA>

⁷⁷ See: <http://tickets.amtrak.com/itd/amtrak>

⁷⁸ See CHSRA's Draft 2014 Business Plan, Cambridge Systematics' (CS) final technical memorandum of Ridership and Revenue Forecasting, Table 3.1, [PDF 28]

⁷⁹ In Federal Fiscal Year 2010-11, the San Joaquin route required a 46% subsidy to make up the difference between its operating costs and passenger-based revenues. Source: "Amtrak Operating Results, Amtrak Invoice (Actual and Contract Results) at 100%.

⁸⁰ For gasoline-only costs, see <http://www.travelmath.com/cost-of-driving/from/Merced,+CA/to/Los+Angeles,+CA>. The Authority's "fully loaded" one-way cost of driving the 280 miles is \$78. See PDF page 33, Table 4-4 on page 4-4, of the 2014 Draft Plan, Cambridge Systematics' Technical Memorandum, Ridership and Revenue Forecasting, at an average of 25 cents per mile. Note: This "Auto" could hold from 1 to 4 passengers.

⁸¹ See CHSRA's Draft 2014 Business Plan, Cambridge Systematics' (CS) final technical memorandum of Ridership and Revenue Forecasting, Table 3.1, [PDF 28]

⁸² See: Chuyuan Zhong, Germà Bel, and Mildred Warner: High-Speed Rail Accessibility: What Can California Learn From Spain? 2013, found at: http://mildredwarner.org.s3.amazonaws.com/2012/09/20/Zhong_Bel_Warner_HighSpeedRail_2012-b19b0817.pdf

⁸³ Ibid, pg. 8

⁸⁴ Ibid, pg 12

⁸⁵ Ibid, pg. 9

⁸⁶ Ibid, pg. 22

⁸⁷ Ibid, pg. 18

⁸⁸ In addition to the claims made by the UIC/IUR's Director of High-Speed Rail in the US Congress (Figure 2) since the introduction of the AVE between Madrid and Barcelona, HSR has captured over 50% of the train-air passengers. See: "EU could ground short-haul flights in favor of high-speed rail." *The Guardian*, April 18th 2011: at

<http://www.theguardian.com/world/2011/apr/18/eu-transport-plan-short-haul-flights>

⁸⁹ In their worldwide study, *The Economics and Politics of High-Speed Rail; Lessons From Experiences Abroad*, page xiii, authors Daniel Albalade, and Germa Bel in; (Lexington Books, 2012) showed that most HSR passengers are those who "travel for business reasons and whose ticket (the amount of which is far from covering the total cost of the service) is paid for by their employers." In May 2009 Iñaki Barrón de Angoitia, Director of High-Speed Rail at the IUR, said, "Only two routes in the world — between Tokyo and Osaka, and between Paris and Lyon — have broken even." See: Spain's High-Speed Rail Offers Guideposts For U.S." *NY Times*, May 29, 2009. Those PPM fares are 56¢ and 34¢ vs. 23¢ in CA respectively.

⁹⁰ See: Draft 2014 Business Plan, Exhibit 1.1, page 16 [PDF 16]

⁹¹ Ibid. pg. 29 [PDF 29]

⁹² Ibid. Exhibit 1.1, [PDF 16] says the IOS costs \$31 Billion to build and by time the B2B is completed, \$51 Billion will be spent; implying the B2B will cost \$20 Billion, much if not all to be privately funded.

⁹³ Five months before Prop 1A passed (June 2008) the Authority's consultants, IMG, reported that private, ". . . respondents argued that interest in equity investment would increase if the risk to the concessionaire were decreased, perhaps through some form of revenue guarantee . . ." [See: Report of Responses to the Request for Expressions of Interest For Private Participation in the Development of A High-Speed Train System in California by the Infrastructure Management Group (IMG) to the California High-Speed Rail Authority Board Financing Workshop, dated October 2008; page 2 of 17 The presentation was given in June but the printed report issued in October. "A presentation summarizing the results of the RFEI was made before the Authority Board of Directors on June 11, 2008 "] Eighteen months after the IMG's 2008 survey, in a September 2009 IMG-Goldman Sachs workshop, CHSRA learned: "Private appetite for ridership risk is limited without revenue guarantee or until ridership proven." [See: California High-Speed Rail Authority Board Financing Workshop; A presentation by Infrastructure Management Group Inc. and Goldman Sachs; September 3, 2009; pages 9-1]

⁹⁴ See Exhibit 1.1 [PDF 16] of the 2014 Draft Plan. The IOS is to cost \$31 Billion (YOE) and the cumulative expenditure through building the Bay to Basin is listed as \$51 Billion.

⁹⁵ Norwalk and Berkeley, both considered inner radius suburbs of their central city, are roughly equal distances (15 miles) from Los Angeles Union Station and the SF TransBay Center respectively. A 2004 study suggests the market catchment area of Amtrak to be a 25 miles radius. See: T.R. Leinbach, City Interactions: The Dynamics of Passenger and Freight Flows, in Hansen & Giuliano; *The Geography of Urban Transportation* (pp. 30-58). NY: Guilford Press.

⁹⁶ This option assumes the passenger goes from Merced to Oakland by CHSRA bus service, then to Berkeley by BART

⁹⁷ Assumes the driver lives in Downtown LA, Huntington Park or South Los Angeles, a 15-minute drive to pass near LA Union Station on or entering Hwy 5.

⁹⁸ The airport nearest Norwalk is Long Beach (LGB) – 12 miles. See: <http://www.travelmath.com/nearest-airport/Norwalk,+CA>. Driving time is 20 minutes. Prime Time Shuttle is scheduled pick-up. See <https://primetimeshuttle.hudsonltd.net/res>

⁹⁹ The San Francisco TransBay Center (SFTBC) is supposed to substitute for the Caltrain Terminal at from 4th and King Street. While SFTBC is scheduled to be completed in the fall of 2017, five years before the IOS is completed, the IOS funding does not include a connection to the SFTBC. See: <http://transbaycenter.org/construction-updates/project-schedule>

¹⁰⁰ Driving time to the Norwalk/Santa Fe Springs Metrolink station is assumed to be 5 minutes, connection time another 5 minutes

¹⁰¹ Travel times for the 10 daily Metrolink trains (5am-5:33pm) between the Norwalk/Santa Fe Springs Station to LA Union Station vary between 27 and 37 minutes; the average being 30.2 minutes. See: http://www.metrolinktrains.com/schedules/line/name/Orange%20County/service_id/1152.html Amtrak does not stop at the Norwalk/Santa Fe Springs Station.

¹⁰² PDF page 25, Figure 3.1 of the 2014 Draft Plan, Cambridge Systematics' Technical Memorandum, Ridership and Revenue Forecasting, shows that during the IOS-Only Phase, there will be a Dedicated Bus Connection between LA Union Station and San Fernando. Travel time is 37 minutes per page A-1 [PDF 68] of the 2014 Draft Plan, Cambridge Systematics' Technical Memorandum, Ridership and Revenue Forecasting.

¹⁰³ Assumes the average 2014 Plan's Merced-San Fernando run times (123-132 minutes); See the HSR Patterns table on page A-1 [PDF 68] of the 2014 Draft Plan, Cambridge Systematics' Technical Memorandum, Ridership and Revenue Forecasting.

¹⁰⁴ This is by CHSRA dedicated bus. Travel time is 160 minutes per page A-1 [PDF 68] of the 2014 Draft Plan, Cambridge Systematics' Technical Memorandum, Ridership and Revenue Forecasting.

¹⁰⁵ Flying times: LGB-OAK, See: <http://www.travelmath.com/flying-time/from/Long+Beach,+CA/to/Oakland,+CA> For LAX-SJC, see: <http://www.travelmath.com/flying-time/from/LAX/to/SJC> For LAX-SFO, see: <http://www.travelmath.com/flying-time/from/LAX/to/SFO>

¹⁰⁶ BART from Oakland Lake Merritt to Downtown Berkeley takes 16 minutes and Oakland Coliseum to Downtown Berkeley takes 23 minutes. See: <http://www.bart.gov/schedules/bylineresults?route=3&date=03/02/2014>

¹⁰⁷ Assume from the aircraft's landing to the free Airport Shuttle bus takes 15 minutes. The No. 10 VTA Bus takes 10 minutes from SJC to the Santa Clara Transit Center. See: <http://www.vta.org/routes/rt10>. From there it connects with Caltrain to San Jose Diridon station, which takes 9-10 minutes. Counting connection time, from SJC to downtown takes approximately 35 minutes.

¹⁰⁸ For Norwalk to Berkeley driving times see: <http://www.travelmath.com/driving-time/from/Norwalk,+CA/to/Berkeley,+CA>.

¹⁰⁹ For Central Los Angeles to San Jose city center is 5hrs. 20 minutes see: <http://www.travelmath.com/driving-time/from/Norwalk,+CA/to/San+Jose,+CA>

¹¹⁰ See page A-2, [PDF 69] 2014 Draft Plan, Cambridge Systematics' Technical Memorandum, Ridership and Revenue Forecasting

¹¹¹ See Exhibit 1.1 [PDF 16] of the 2014 Draft Plan. The IOS is to cost \$31 Billion (YOE) and the cumulative expenditure through building the Bay to Basin is listed as \$51 Billion.

¹¹² That would be an annual growth rate of about 25%

¹¹³ Travelmath.com computes the costs of the 403 miles using gas mileage at 25mpg, gas prices at \$3.37, and consumption of 16.12 gallons for a total price of \$54.42. See: <http://www.travelmath.com/cost-of-driving/from/San+Francisco,+CA/to/Anaheim,+CA>. Even considering lower miles per gallon or higher gasoline prices, three passengers would not increase the price of driving one way four-fold. The \$300 estimate errs to the high side, while four fares to go the distance on CHSRA's offering would cost \$452 (\$113 x 4). A round trip would cost \$904 and take 16 hours and thirty-two minutes.

¹¹⁴ In 2011, the State employed about 400,000 Full Time Equivalents. See: <http://www2.census.gov/govs/apes/11stca.txt>. Local and special purpose governments in California employed about 1.35 Million. See: <http://www2.census.gov/govs/apes/11locca.txt>. However, local and special purpose employees rarely travel outside their jurisdiction, and State government employees only occasionally. Even assuming all 1.75 million of them did use HSR annually and each took two trips, ridership by all California government employees would be 3.5 million, a fraction of Figure 1's estimates.

¹¹⁵ In 2008, the downtown LA-to-downtown SF Phase 1, all on high-speed trains, was touted as costing \$33 Billion. By November 2011, that had risen as high as \$117 Billion. Only when the Authority unilaterally eliminated the expensive 'Bookends' did the costs seem to retreat to \$68-\$79 Billion. The Authority also claimed they could build the Initial Construction Section in the Central Valley with their \$6 Billion in-hand until November 2013 when their engineers admitted the ICS' costs are closer to \$7-\$8 Billion. Within the space of two years, that ICS now costs 18-33% more than the Authority has commitments for. ICS construction was to have started in September 2012. As of close of February 2014, the Authority is still a long way from acquiring enough land to seriously begin construction.

¹¹⁶ PDF page 25 and Figure 3.2 [PDF 26] of the 2014 Draft Plan, Cambridge Systematics' Technical Memorandum, Ridership and Revenue Forecasting, shows that by 2027, six years after the IOS is operational, the Bay to Basin section will open between Fresno and San Jose. The driving distance

between Fresno and San Jose is 151 miles. See: <http://www.travelmath.com/drive-distance/from/Fresno,+CA/to/San+Jose,+CA>

¹¹⁷ PDF 26 and Figure 3.3 [PDF 26] of the 2014 Draft Plan, Cambridge Systematics' Technical Memorandum, Ridership and Revenue Forecasting, shows that by 2029, eight years after the IOS is operational, what the Authority refers to as Phase 1 will open between Los Angeles Union Station and San Francisco's TransBay Center. This ignores the fact that 2008's voters were promised a southern terminus of Phase 1 at Anaheim. Figure 3.3 shows Anaheim-bound riders must change to Metrolink at LA's Union Station.

¹¹⁸ See California High-Speed Rail Program; Draft 2012 Business Plan, November 1, 2011, pg. ES-8 [PDF14]

¹¹⁹ The 2014 Draft Plan, page 17, still claims the train will alleviate both congestion and pollution. See: *"The high-speed rail system will help reduce congestion on the state's highways and at its airports, will help the state improve air quality and meet its greenhouse gas reduction goals, and put thousands of people back to work"* Once HSR is in the Central Valley, and fares per mile jump, present-day Amtrak riders will vote with their pocketbooks to find auto or bus alternatives – exacerbating congestion and pollution. Unless there is some yet-to-be announced policy to end transit subsidies at the 'Bookends' the Caltrain and Metrolink riders will stay with their subsidized rail rides.

¹²⁰ This Paper does not analyze the subject of CHSRA's claims of a profitable service or environmental advantages while operating. However, The Authority's 2014 Draft Plan admits that the first three years (2022-2024) of the IOS-Only Phase will require an operating subsidy of \$50 Million. See: California High-Speed Rail Draft 2014 Business Plan, Exhibit 6.1, page 52 [PDF 52]. There is no provision in the underlying legislation (AB3034) to permit the first three years of the system to have an operating subsidy. Not only would explicit ballot claims in 2008 of "NO NEW TAXES" be violated; but to finance that deficit, new legislation to override AB3034's Section 2704.08 (c) (2) (J) and Section 2704.08 (d) (2) (D) would have to be passed to allow this to happen. See: 2008, Supplemental Quick Reference Guide on Proposition 1A, page 3. Admission of this subsidy would also have a 'chilling effect' on would-be passengers. The actual or potential disruption to sales and ticketing during the 1980s and 1990s during the US budget airline 'shake-out' is proof positive the traveling public will only buy tickets into the near future from a stable transport alternative. The lack of a clear future for HSR, plus the legislative wrangling and inevitable court cases will inflict on the perception that HSR will not be available cannot be discounted. While Coca-Cola and Apple survived 'bumps-in-the-road' and continued as on-going businesses, HSR in California is a start-up company with considerable competition in the in-state transport system. Customers don't buy promises of better HSR tomorrow: they buy today's predictable and inexpensive modes transportation services to where they need to go soon.

2014 Business Plan RECORD DETAIL

Record Date : 4/4/2014
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Affiliation Type : Individual
Interest As : Businesses And Organizations
Submission Method : Project Email
First Name : William
Last Name : Grindley
Business/Organization :
City :
County :
Zip Code : 00000
Stakeholder Comments/Issues : Administrator for Comments
Draft 2014 Business Plan
California High-Speed Rail Authority
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The attached paper, comments by William Grindley on the Draft 2014 Business Plan, is broken into four Sections, each focused at a failing of the Draft Plan. Each of the twenty-three arguments first summarizes the argument in a lead statement; then details why that conclusion was forthcoming. The comments are not in the sequence of the pages of the Draft 2014 Plan or the technical and supporting documents.

As well as ignoring the strictures of AB3034 and the Peer Review Group's recommendations, the Draft 2014 Business Plan gives readers even less evidence of the project's viability than prior Plans. While claiming much has changed in ridership, revenues and operating expenses, the Plan is more of the same - plus ça change, plus c'est la même chose. These comments address only some of those shortcomings.

This paper has also been shipped to the Authority via FedEx and has a guaranteed arrival on Monday, April 8th 2014.

William Grindley
[REDACTED]
Atherton, CA 94027

**Draft Business Plan Comment
Type :**

Attachments : WG Comments on Draft 2014 Business Plan.pdf (337 kb)

PLUS ÇA CHANGE, PLUS C'EST LA MÊME CHOSE

A Review and Comments On the California High-Speed Rail Authority's Draft 2014 Business Plan

Preface: As well as ignoring the strictures of AB3034 and the Peer Review Group's recommendations, the Draft 2014 Business Plan gives readers even less evidence of the project's viability than prior Plans. While claiming much has changed in ridership, revenues and operating expenses, the Plan is more of the same – *plus ça change, plus c'est la même chose*. These comments address only some of those shortcomings.

This paper is broken into four Sections, each focused at a failing of the Draft Plan. Each of the twenty-three arguments first summarizes the argument in a lead statement; then details why that conclusion was forthcoming. The comments are not in the sequence of the pages of the Draft 2014 Plan or the technical and supporting documents.

Prepared by: William Grindley
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SECTION I

THE 2014 DRAFT PLAN IGNORES AT LEAST SEVEN FUNDAMENTAL DEMANDS OF AB3034.

1. The 2014 Draft Plan admits the HSR program will need an illegal operating subsidy – The CHSRA's high-speed train system must be judged first and foremost like other business; it either succeeds financially without an operating subsidy or goes bankrupt.¹ That was the promise and that is the law (AB3034).

Before the Draft 2014 Plan was released, the State Auditor said that *"the Authority should clearly disclose that the 2012 draft business plan assumes that the State will only be receiving profits for the first two years of operation in 2022 and 2023, and potentially not again until 2060 in exchange for the almost \$11 billion the Authority assumes it will receive from the private sector over a four-year period."*² The Auditor noted this was a recommendation from two years ago that had not been "fully implemented."

The Draft 2014 Business Plan again broaches the subject of a \$50 Million operating subsidy during the ramp-up period.³ The requirements of AB3034, Section 2704.08 (c) (2) (J) and Section 2704.08 (d) (2) (D) are the train cannot have an operating subsidy. No mention is made in AB3034 of allowing an operating subsidy during the ramp-up period. This may have been an 'opening salvo' to prepare Legislators to think about the need for an operating subsidy.

By this hint of a need for an operating subsidy, the Authority is, in effect, 'opening the door' to violate a key premise of why Prop1A gained popular support in 2008. They are fully aware of the prohibition on an operating subsidy, and like many 'temporary' measures, this too has the potential to be not only permanent, but far exceed \$50 Million annually.

2. The Draft 2014 Plan admits that it will not meet AB304's intent to have the entire system completed by 2020. In 2008, the Legislature intended that *"the entire high-speed train system shall be constructed as quickly as possible in order to maximize ridership and the mobility of Californians, and that it be completed no later than 2020 . . ."*⁴ This ability to build quickly and maximize ridership were criteria for selecting the Central Valley as the Usable Segment.⁵

¹ AB3034 Section 9, Article 2 (5) says; "Revenues of the authority, generated by operations of the high-speed train system above and beyond operating and maintenance costs and financing obligations, including, but not limited to, support of revenue bonds, as determined by the authority, shall be used for construction, expansion, improvement, replacement, and rehabilitation of the high-speed train system .

² See: California State Auditor Report 2014-406 A, February 2014, Table 1, page 1

³ See: California High-Speed Rail Draft 2014 Business Plan, Exhibit 6.3, page 52 [PDF 52].

⁴ See Section 8 (f) of Section 185033 of the Public Utilities 2 Code (AB3034), which reads "(f) It is the intent of the Legislature that the entire high-speed train system shall be constructed as quickly as possible in order to maximize ridership and the mobility of Californians, and that it be completed no later than 2020, and that all phases shall be built in a manner that yields maximum benefit consistent with available revenues."

⁵ See CRITERIA FOR SELECTING THE SECTION/USABLE SEGMENT IN WHICH TO INITIATE CONSTRUCTION OF

Yet, not only will the “. . . the entire high-speed train system . . .” not be constructed by 2020 or 2021, the Authority admits that not even the 300 mile usable segment (aka Initial Operating Segment) will be ready in 2020 when the Draft 2014 Plan says, “The initial operating segment (IOS) is planned to begin service in 2022 . . .” However badly written AB3034 was, that delay is another clear violation of the law.

3. The 2014 Draft Plan ‘fudges’ on 2008’s promised operating speeds while experience shows that actual average operating speeds are about half of even the ‘fudged’ speed – Prop1A said the proposed high-speed rail (HSR) system “Establishes a clean, efficient 220 MPH transportation system.” and “. . . the need to test and certify trains operating at speeds of 220 miles per hour . . .”(Emphasis added) ⁶ The 2014 Plan now ‘fudges’ operating speed downward from 220mph to operate, “. . . at speeds capable of exceeding 200 miles per hour.” ⁷ That’s more than a 10% drop, since the Plan’s statement doesn’t even promise to operate at 220 miles per hour. Another broken promise.

Figure 1 Analysis of IUR/UIC Station-To-Station Times And Average Speeds			
Origin and Destination of Nine HSR Routes	– Station-to-Station –		
	Distance (miles)	Travel Time	Average Speed
Paris-Brussels	194	1hr 22min	145mph
Paris-Lyon	269	1hr 56min	136mph
Madrid-Seville	295	2hrs 20min	74mph
Rome-Bologna	224	2. 5hrs	54mph
Tokyo-Osaka	322	2.5hrs	129mph
Paris-London	271	2.5hrs	108mph
Stockholm-Gotenburg	284	3hrs	95mph
Paris-Amsterdam	338	4hrs	85mph
Rome-Milan	350	4hrs 10 min	85mph
Average station to station speed			101mph

However, as Figure 1 shows, even a 200mph average is still unrealistic given that data from decades of operations in Europe and Japan confirm that above about 186mph, power costs surge, maintenance costs increase, deceleration times increase and time advantages of going faster diminish.

The International Union of Railways/UIC Director of HSR presented data on travel times and consequently average speeds to the US Congress in 2007.⁸ Figure 2 analyzes the realities of station-to-station times and average speeds on high-speed rail routes from that presentation. What jumps out is that, on

THE CALIFORNIA HIGH-SPEED TRAIN PROJECT. Found at:

http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCsQFjAA&url=http%3A%2F%2Fwww.hsr.ca.gov%2Fdocs%2Fbrdmeetings%2F2010%2FNovember%2Fbrdmtg110410_agenda3AB.pdf&ei=Kk48U9WHMdaosASp8YHAAw&usq=AFQjCNHam0b1Ezq94BBT657sCvtAdoeZQQ&sig2=Mmf_VQfo-9f24aRkUd_7dA&bvm=bv.63934634,d.cWc

⁶ See Official Voter Information Guide, page 4, and AB3034, Section 2704.08 (K)(f)(2).

⁷ See: California High-Speed Rail Draft 2014 Business Plan, page 3 [PDF 3]

⁸ Iñaki Barron de Angoitia, Director of High Speed Rail at the International Union of Railways/UIC, presented this chart to the US Congress On April 19th 2007. See: International High-Speed Rail Systems: a Hearing before the Subcommittee on Railroads, Pipelines and Hazardous Materials of the Committee on Transportation and Infrastructure, House of Representatives; April 19, 2007, at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_house_hearings&docid=f:34799.pdf.

average, existing high-speed routes average a little over 100mph between destinations.

This presentation and analysis is important for two reasons. First, it shows that operating speeds in the 2014 Plan are below the CHSRA's promise to voters in 2008 and the strictures of AB3034. Second, a simple deduction from this first finding is that travel times are much longer – perhaps twice as much as the 2 hour and 40 minute 2008 promise between the downtowns of San Francisco and Los Angeles. The Authority continues to apply the Procrustean Bed concept to its travel time forecasts.

4. The 2014 Draft Plan fails to identify the sources of supplemental funds to complete construction of the Initial Construction Section (ICS) [aka First Construction Section (FCS)] – AB3034 required all funds needed to build a section or corridor must be available before proceeding with construction. The Initial Construction Sector (ICS) not only disappeared from the Draft 2014 Plan, although it has been part of both prior plans and is integral to the Cooperative Agreement with the DOT/FRA, the costs have increased beyond the \$6 Billion the Authority has 'in hand' or commitments for.⁹ Only the IOS is discussed in the Draft 2014 Plan. [Strangely, the map on PDF 14 clearly has construction of the IOS as far north as Merced, but the first construction starts in Madera, 33 miles to the south.¹⁰]

An ICS/FCS is mentioned in an employment claim on PDF 59 of the 2014 Draft Business Plan, and a First Construction Section is in its glossary on PDF 74 of the Plan, but no definition is given of that portion or its relationship to the IOS or the prior ICS.¹¹ Only on PDF 22 what was the Merced to Bakersfield section (aka ICS or FCS) is referred to: *"Building this first section will involve multiple construction packages with work to be completed in 2018. "*

Based on the Authority's own data, the July 2013 Briefing Paper, Diminishing Prospects For The CHSRA's Initial Construction Section, points out that ICS costs exceed the sum of the State and Federal funds available to build between Merced and Bakersfield.¹² The costs of acquisitions and construction for Amtrak-Ready

⁹ See: the November 2011 CHSRA Draft Business Plan. Page ES-7 [PDF 13] describes the ICS as 130 miles between Fresno and Bakersfield and; *"Provides track and structures to support system spine."* PDF 81 of the Cooperative Agreement between the DOT/FRA and the Authority says; *"Pending completion of environmental review, CHSRA would start construction of an initial Central Valley Section from Madera County to Bakersfield (Kern County), California (hereinafter the "Project")."* PDF 81-82 of that Agreement says; *"The Project spans two EIRs/EISs . . . (1) Merced to Fresno and (2) Fresno to Bakersfield for initial Central Valley construction."*

¹⁰ In the April 2012 Business Plan [PDF 15], the Authority purports to start in Merced; *"The IOS of the California high-speed rail system will connect Merced to the San Fernando Valley gateway to Los Angeles."* Later in that Plan [PDF 55] it says *"The IOS is achieved through expansion of the first construction segment into an electrified operating high-speed rail line from Merced to Palmdale and the San Fernando Valley."* and on that same page says, *"Currently, the IOS is defined as extending from Merced to the San Fernando Valley . . ."* More such citations are found on PDF 62, PDF 64 (where HSR supposedly connects to the ACE), and PDF 88. This 33 mile shorter route saves the Authority over \$2 Billion. However, in Exhibit 2.2 [PDF 34] of the 2014 Draft Plan, even the IOS' definition became vague; *"Cost to construct IOS Central Valley [no specific starting point] to San Fernando Valley [not San Fernando]"* Madera is only mentioned in the 2014 Draft Plan in a breakdown of the benefits of SB1029 and there was no mention of Madera in the April 2012 Business Plan.

¹¹ The first construction segment is mentioned on page 8-2 [PDF 170] of the April 2012 Business Plan, *" . . . the Merced-to-Fresno section of the first construction segment of the IOS"*

¹² Available at www.sites.google.com/site/hsrscaliff

track for the Madera-to-Bakersfield Initial Construction Section (ICS) were shown to be nearly \$7 Billion (\$6.97)¹³ – about a Billion more than the Authority had in-hand or prospects for receiving. Yet the Authority still claimed they had enough to build 130 miles between Madera and Bakersfield.

The Diminishing Prospects Paper showed Authority had a shortfall of at least \$600 Million – even when ignoring their risky assumptions about soils conditions south of Fresno, and allocating no contingency funds in their latest Agreement with the DOT/FRA. After spending about \$7 Billion to duplicate parallel tracks, the ICS could well stop some 40 miles north of Bakersfield. Not a bright prospect for fulfilling 2008's promises to voters.

5. The Draft business plan illegally diverts Prop 1A funds for regional rail projects – Except for the \$950 million allotted to “connectivity projects” Prop1A makes no allowance for improving regional rail transit infrastructure. Yet the 2014 Plan emphasizes rail modernization monies in SB-1029, which allocated \$1.1 Billion from the Prop1A HSR funds in for rail modernization projects.¹⁴ This use of high-speed rail funds for regional rail funds is illegal.

The administration of these funds will be not be by the Authority, but by the regional agencies (eg \$600 million diverted to Caltrain for its own electrification project.) Clearly Caltrain electrification is not a connectivity project, but a regional “rail modernization” project. Another anomaly in the allocation of \$500 Million of SB1029 funds for Caltrain electrification is that Caltrain does not go beyond 4th and King to the San Francisco TransBay Center (TBC), yet Prop1A demands the high-speed rail project start at the TBC. And in southern California, none of the roughly \$500 Million of SB1029 funds will go to preparing the Metrolink routes to accept electrified high-speed trains.

Matching funds for Caltrain's electrification project, as defined in the Memorandum of Understanding (MOU) between Caltrain and the Authority, were for the most part to be secured from funds from the Federal Transit Administration (FTA). To date these FTA funds have not been secured. FTA funds are for regional rail and intra-city rail projects. The high-speed rail project is an inter-city Passenger rail project, administered by the Federal Railroad Administration.

6. The 2014 Draft Plan fails to identify the escalated costs to complete the Initial Operating Segment (IOS) – Despite AB3034 requiring that all funds to build a section or corridor be identified and available before

¹³ See Appendix B of Diminishing Prospects For the CHSRA's Initial Construction Section, Found at: <https://www.sites.google.com/site/hsrcaiffr/home/briefing-papers/07-2013-diminishing-prospects-for-the-central-valley-project>

¹⁴ Page 4 of the Draft 2014 Plan says “Also in 2012, the Authority adopted its 2012 Business Plan that laid out a new framework for implementing the California high-speed rail system in concert with other state, regional and local rail investments, as part of a broader statewide rail modernization program. And page 18 says “Prior to 2020, Proposition1A investments in urban transit systems and rail modernization projects like the Caltrain electrification project will result in tens of thousands of tons of reductions in GHG emissions.” referring for example to the use of Prop1A monies for urban transit.

proceeding with construction, the Draft Plan's IOS cost estimates notably exclude the largest cost components. The paper, *Diminishing Prospects*, pointed out that the costs to acquire properties, move or rebuild infrastructure in Construction Package #1 (CP1) are about twice the capital costs of that 29-mile section.¹⁵ Exhibit 3.2 of the Draft 2014 Plan exhibits the same amnesia about the costs to acquire properties, move or rebuild existing infrastructure.

CHSRA's estimate that the ICS and IOS will now cost about \$27.8, a reduction of nearly \$4 Billion, is eye candy.¹⁶ Like its counterpart construction estimate for the first 29 miles, it attempts to narrow the public's vision to only construction items and represent the estimate as a savings to the public. Like the 'undeclared' costs in the first construction section (CP1A, CP1B and CP1C) the costs to acquire property, move or rebuild highway, telecom, irrigation and electrical infrastructure in the IOS will be at least twice that in Exhibit 3.2, particularly since south of Fresno the Authority faces the slopes of the Tehachapi mountains, soil subsidence and oil fields.

Actually the Authority hints at a much higher cost IOS, "*Until final environmental approval of all preferred alignments, stations and maintenance facilities is received, a number of key decisions remain to be made by the Authority.*"¹⁷ Therefore, a realistic cost estimate of the IOS won't be known until later, perhaps much later. While it may seem outrageous today, it is not inconceivable that the IOS would, if built, cost \$50 Billion or more in today's dollars.

However, the point may be moot. First, as the ruling on Part One of Tos, Fukuda made obvious, the Authority may choose to call their construction what they please, but they still lack at least \$25 Billion to fund their defined IOS. Second, the Scope of work for Tutor-Perini to construct the trackbed for first 29 miles (CP1A, CP1B and CP1C) is very explicit about the "*Contractor's design and construction shall be completed such as to ensure the Project's ultimate readiness for high- speed rail passenger operations.*"¹⁸ In short, none of the award's \$985 Million is to be spent for components to be HSR-Ready. Third, the 2012 version of the DOT/CHSRA Cooperative Agreement says; "*HST systems elements are not included in this Project (e.g., electrification, communications systems, train control, rolling stock, and vehicle maintenance facilities); these elements will be added by CHSRA as additional funding permits and are required to complete an initial operating segment.*"¹⁹ Even if the Authority somehow gains access to State funds, they have a still would have only a fifth of the more

¹⁵ This led to an estimate of nearly \$7 Billion for only an Amtrak-Ready trackbed between Madera and Bakersfield. See: Figure 1 [PDF 6] and Appendix A, *Diminishing Prospects* for the CHSRA's Initial Construction Section (ICS), July 2013. Found at www.sites.google.com/site/hsrcaiffr

¹⁶ See Exhibit 3.2, PDF 34, CHSRA, Draft 2014 Business Plan, February 7 2014

¹⁷ See PDF 34, CHSRA, Draft 2014 Business Plan, February 7 2014; found at http://www.hsr.ca.gov/About/Business_Plans/Draft_2014_Business_Plan.html

¹⁸ See: PDF 15 (Exhibit C) of the July 31 2013 California High-Speed Train (HST) Project document, HSR: Agreement 13-06, Book2, Part C, Subpart 1: Scope of Work, Revision 9, Execution Version. Found at: http://www.hsr.ca.gov/Programs/Construction/HSR11-16_Design_Build_Contract/

¹⁹ See: page 82 [PDF 84] of Grant/Cooperative Agreement: Agreement Number FR-HSR-0009-10-10-15, electronically signed December 5th 2012. Found at: <http://www.hsr.ca.gov/serp.html?q=Grant%2FCooperative+Agreement%3A+Agreement+Number+FR-HSR-0009-10-10-15%2C+December+5th+2012&cx=001779225245372747843%3Ajsoc-pxls&cof=FORID%3A10&ie=UTF-8>

than \$31 Billion the IOS is likely to cost.

Four months after the July 2013 Briefing Paper, Diminishing Prospects For The CHSRA's Initial Construction Section was posted, the Authority admitted the Merced-to-Bakersfield HSR-Ready price had escalated – to \$13.2 Billion (in 2012 \$s).²⁰ By the time the Draft 2014 Business Plan was issued, the only-HSR-Ready cost was more than double the Authority's roughly \$6 Billion of funds in hand. Parsing this HSR-Ready cost for 163 miles to only be Madera-to-Bakersfield, and reducing the costs to remove the costs of trains and program level costs, lowers the Authority's \$13.2 Billion to \$9.2 Billion to build an HSR-Ready ICS. That conservative figure is still 50% more than the Authority has in-hand or prospects for receiving.

Back in 2010, the State Auditor said *"To ensure that it can respond adequately to funding levels that may vary from its business plan, the Authority should develop and publish alternative funding scenarios that reflect the possibility of reduced or delayed funding from the planned sources."*²¹ In their 2014 progress report, the Auditor said this recommendation had not been *"fully implemented"* – clearly an understatement.

7. The 2014 Draft Plan fails to identify any more funds – much less any available and committed sources of supplemental funding for the ICS/FCS – After admitting in November 2013 that the ICS/FCS is going to be at least 50% more expensive, a reasonable expectation would be for the Authority to admit the shortfall. While the Draft Plan says, *"While we continue to stay focused on building the first construction section [FCS] in the Central Valley"*, nowhere in the 2014 Draft Plan are the already-higher costs of building the ICS/FCS mentioned.²² If the Authority is focused on this section yet doesn't have the funds in hand to complete the ICS/FCS' 130 miles, there is little value in analyzing the costs of build the entire 300 miles of the Initial Operating Segment (IOS) until it solves the conundrum of where the funds come from to build the ICS/FCS. The Draft Plan will be just a fantasy without solving that conundrum.

8. The Draft 2014 Plan fails to mention how it intends to respond to the Superior Court's rulings of August and November 2013 – The Plan outlines that it has secured \$6 Billion, the Surface Transportation Board's (STB) approval, the dubious claims of having received solid marks from the Government Accountability Office (GAO), started construction on the first twenty-nine miles, and other accomplishments.²³

But all is not sweetness and light. The Plan did not mention STB's rejection of a

²⁰ Table Two shows the Merced-Fresno leg at \$5.482 Billion, and the Fresno to Bakersfield leg at \$7.711 Billion. See page 12 [PDF 16] of the CHSRA, Project Update Report to the California State Legislature, November 15, 2013. Found at:

http://www.hsr.ca.gov/docs/about/legislative_affairs/SB_1029_Project_Update_Rpt_11_2013.pdf

²¹ See: California State Auditor Report 2014-406 A, February 2014, Table 1, page 1

²² See Draft 2014 Business Plan, page 12 [PDF 12]

²³ See Draft 2014 Business Plan, pages 21-23 [PDF 21-23]

later CHSRA request, that the State Auditor did not give the Authority high marks on accomplishing milestones set out two years prior, nor that February 2014 is sixteen months after the long-awaited start of construction. It also failed to mention the Big Kahuna. Five months after the Superior Court agreed with the Plaintiffs in Tos, Fukuda and Kings County vs the California High-Speed Rail Authority et al, the Draft 2014 Plan makes no mention of the remedies that will bring either \$20 Billion more of capital to build the IOS, nor the required environmental certification of about 90% of the line, nor electrification or rolling stock.

While challenging the legal authority of the Superior court ruling may be one way to stall the legal process, it doesn't solve the inevitable financial failure of the project because of a lack of funds to build even the ICS/FCS, much less the IOS.

SECTION II

THE 2014 DRAFT PLAN IGNORES OR DISTORTS THE FINDINGS OF ITS PEER REVIEW GROUP AND THE GOVERNMENT ACCOUNTABILITY OFFICE (GAO)

9. The 2014 Draft Plan ignores the comments of the statutorily required Peer Review Group's (PRG) January 2012 report – More than two years before the 2014 Draft Plan was released, the PRG made comments the Authority seems to have ignored.

The Plan doesn't mention its own invention, the Initial Construction Section (aka First Construction Section), except in a table of costs of the Initial Operating Section [sic – should be Segment].²⁴ But the Peer's did, and were forthright in their comments about its lack of legality when they said, *"Further, the ICS as planned. . . does not appear to meet the requirements of the enabling State legislation. . . the ICS will not be electrified, and thus cannot serve as a high-speed test track for future VHSR rolling stock"*²⁵

The Peers also stressed *" . . . that the cost component of the project that may have the most inherent uncertainty – the ICS – has no low or high scenario, and is shown as a constant \$6 billion. Given that there has been no construction experience at all, and considering the fact that the route is not fully defined, this appears unreasonable in itself."*²⁶ This also remains the case with the Draft 2014 Plan. It is clear the operating plan is to build south from Madera until the available money is gone (which may be \$6 Million, or \$3.3 Billion) to tie the track to the BNSF track, and declare victory.

The Peers spoke clearly when they said *" . . . the CHSRA has been very honest in making it clear that they do not have the additional \$25 to \$30 billion needed to complete either of the Initial Operating Segments, and there is no existing funding sources at any level of government that could credibly fill the gap."*²⁷ Nothing has changed, no further federal funding has been found, no private sector funders have stepped forward, and yet the Authority keeps spending as if a financing miracle is to happen.

Although nearly two years old, the fact that the 2012 report said *"the Peer Review Group cannot at this time recommend that the Legislature approve the appropriation of bond proceeds for this project."* and that *"absent a clearer picture of where future funding is going to come from . . ."* still holds true in the Draft 2014 Plan is an indictment of the Authority's ignorance or intentional avoidance of reality in this project.²⁸

²⁴ See Draft 2014 Plan, Exhibit 3.2, PDF 34

²⁵ See page 3 [PDF 3] of California High-Speed Peer Review Group report to the Legislature, January 3, 2012.

²⁶ Ibid PDF 6

²⁷ Ibid PDF 3

²⁸ Ibid. PDF 7

10. The Draft 2014 Plan tries, but fails, to convince readers that the GAO accepted their cost estimates – Exhibit 2.1 [PDF 31], the High-Speed Rail Organizational Model has an eerie resemblance to the model used in Europe to subdivide revenues and costs.

The Plan says, "*. . . the GAO found that the Authority's [Capital] cost estimates met all applicable guidance from the FRA and the USDOT.*"²⁹ In a quick read, that statement may seem like an endorsement of the Authority's cost estimates by GAO. It isn't. GAO may have found what was given them to have been recorded in the DOT format, but it does not sanction the Authority's cost estimates. How could GAO endorse that when on the next page the Authority admits that "*. . . a number of key decisions remain to be made by the Authority.*" concerning key capital cost components like "*. . . alignments, stations and maintenance facilities . . .*" That is not endorsement.

²⁹ See PDF 33, CHSRA, Draft 2014 Business Plan, February 7 2014

SECTION III

THE 2014 DRAFT PLAN IGNORES THE REALITIES OF CALIFORNIA'S TRANSPORTATION MARKETPLACE

11. The Draft 2014 Plan has the Authority proposing to launch a service into a highly competitive transportation market without either a travel time or cost advantage³⁰ – For five years (2022-2026) the Initial Operating Segment (IOS) IS high-speed rail (HSR) in California. The California High-Speed Rail Authority (CHSRA) offers nothing more. During this IOS-Only Phase, the fastest surface travel time between suburbs fifteen miles from LA Union and the SF TransBay terminal (6 hours 13 minutes) is by auto, which is nearly an hour faster than any offering by CHSRA. There is no travel time advantage for potential HSR riders to abandon the airlines or their automobiles to take combinations of rail and bus transport modes between the LA Basin and the SF Bay Area during the IOS-Only Phase.

Likewise, would-be HSR travelers during the two-year Bay to Basin Phase (2027-2028) will only benefit from a shorter-than-driving travel time between the downtowns of Los Angeles and San Jose. While more expensive, every itinerary using flights to 'defeat the friction of distance' have significantly lower travel times.

The entire HSR project's rationale: profitable, environment-friendly, more rapid and cheaper travel between San Francisco and Los Angeles' downtowns, becomes unhinged by starting high-speed rail's role in transporting Californians with the IOS-Only Phase as the only offering, and only adding a quicker ride to San Jose in the next, B2B, phase. Launching high-speed rail into the headwinds of market-tested airline operations and relatively very cheap auto travel – both being competitive forces the Authority cannot influence – without unassailable costs and/or travel time advantages is a receipt for rapid financial failure.

12. The Draft 2014 Plan's argument about attracting private capital once the IOS is built is extremely unconvincing because the public transportation marketplace requires subsidies; illegal under AB3034 – The 2014 Draft Plan says the IOS will demonstrate "*Ridership and revenues sufficient to attract private capital for expansion.*"³¹ This will come because the project moves " . . . to complex long-term concession agreements with underlying private capital investment."³² In short, private investors are to raise at-risk funds to buy a concession that will produce enough revenue to both operate the IOS trains profitably and simultaneously invest as much as \$20 billion to

³⁰ All material in this comment on the 2014 Draft Plan is from the Briefing Paper, *If You Build It, They Will Not Come*, March 11th 2014. Found at www.sites.google.com/site/hsrcaiffir

³¹ See: Draft 2014 Business Plan, Exhibit 1.1, page 16 [PDF 16]

³² Ibid. pg. 29 [[PDF 29]

build the Bay to Basin (B2B) infrastructure.³³ All of this is to be done without the State providing an operating subsidy as prohibited by AB3034.

Potential private investors will ask why, as shown in the Briefing Paper, If You Build It, They Will Not Come, should they invest if there are no time or cost advantages for the roughly ninety million auto travelers during the IOS-Only Phase to defect to the CHSRA's offerings.³⁴ They will also ask whether air travelers – many, if not most, of who are on business trips between the metropolises – would choose a round-trip between the two metropolitan centers of 10-17 hours versus six hours door-to-door, especially since their costs are likely reimbursed.

Private investors will see that, unlike the Golden Gate Bridge's use of revenue bonds, there has never been at-risk money put into the project – not since its inception. They will know that the Authority's own consultants told them in 2008 and 2009 that there would be no private money in the project unless there was an illegal subsidy – euphemistically called a 'revenue guarantee.'³⁵ But most importantly they will see evidence that challenges the Authority's ridership claims and ask themselves whether CHSRA's forecasts are realistic enough to risk their personal and clients' savings to pay billions of dollars for a concession.

No private capital has been forthcoming in the nearly two decades the project has been publically discussed. There's a good reason for that. Neither the IOS, nor the B2B phase offers many travelers the clear time or cost advantages that might produce enough revenue to attract private, at-risk capital to pay back its shareholders and invest in further extensions of HSR service. Nor is private, at-risk capital likely to be forthcoming

³³ Ibid. Exhibit 1.1, [PDF 16] says the IOS costs \$31 Billion to build and by time the B2B is completed, \$51 Billion will be spent; implying the B2B will cost \$20 Billion, much if not all to be privately funded.

³⁴ If You Build It, They Will Not Come, March 11th 2014, at www.sites.google.com/site/hsrcaiff

³⁵ Five months before Prop 1A passed (June 2008) the Authority's consultants, IMG, reported that private, ". . . respondents argued that interest in equity investment would increase if the risk to the concessionaire were decreased, perhaps through some form of revenue guarantee . . ." [See: Report of Responses to the Request for Expressions of Interest For Private Participation in the Development of A High-Speed Train System in California by the Infrastructure Management Group (IMG) to the California High-Speed Rail Authority Board Financing Workshop, dated October 2008; page 2 of 17 The presentation was given in June but the printed report issued in October. "A presentation summarizing the results of the RFEI was made before the Authority Board of Directors on June 11, 2008 "] Eighteen months after the IMG's 2008 survey, in a September 2009 IMG-Goldman Sachs workshop, CHSRA learned: "Private appetite for ridership risk is limited without revenue guarantee or until ridership proven." [See: California High-Speed Rail Authority Board Financing Workshop; A presentation by Infrastructure Management Group Inc. and Goldman Sachs; September 3, 2009; pages 9-1]

SECTION IV

THE 2014 DRAFT PLAN MISLEADS, AND IN DOING SO, PRODUCES INDEFENSIBLE CONCLUSIONS

13. The 2014 Plan skews the data on driving costs to favor HSR travel

– Relative to worldwide costs, driving in California is cheap.³⁶ During the IOS-Only Phase an auto driver, can drive the 403 miles between Berkeley and Norwalk for under \$61 in gas (a total operating cost of under \$100) and can add family and friends to the family auto for almost no additional cost, something very useful to have in low density California.³⁷ Travelers could also take the Megabus between the city centers for \$23-\$34.³⁸

But the Authority attempts to paint a very different picture of the costs of traveling by auto. Their approach purposely ignores the discipline of marginal cost economics, artificially inflates the costs of driving and distorts reality in favor of taking the HSR train. For example, using the Authority's approach and their 2014 range of per mile operating costs; in 2022 a family of four's one-way driving costs for the 340 miles between Los Angeles and San Jose would range between \$300 and \$408 – and for the 380 miles between the centers of San Francisco and Los Angeles would range between \$334 and \$456.³⁹ Any driver

³⁶ Comparing an auto's operating costs to a rail trip during the IOS-Only Phase is relevant because HSR also has capital and maintenance costs. The main operating cost of an auto is gasoline. Compared with five nations with sizeable HSR systems, California's gasoline is cheap. Gas in the UK is 92% more expensive than the US, Japan's 74% higher, France's 62% higher, Germany's 49% and Spain's 20% higher. This comparison is important because it demonstrates the relative attractiveness of HSR to California's auto drivers versus HSR relative to drivers in the five other (HSR) markets. See: http://www.nationmaster.com/graph/ene_gas_pri-energy-gasoline-prices

³⁷ Based on gasoline costs, the website, travelmath.com, computes the costs of the 393 miles using gas mileage at 25mpg, gas prices at \$3.859, for a total price of \$60.66. See: <http://www.travelmath.com/cost-of-driving/from/Norwalk,+CA/to/Berkeley,+CA>. Table 4.4 in Cambridge Systematics Technical Memorandum on Ridership and Revenue Forecasting to the 2014 Plan [PDF 33] says the costs of a driver-only trip would be \$98.25-an average of 25¢/mile. What the Plan does not say is that the auto, SUV, van or truck could hold more than one passenger plus the driver, and that their costs are 'fully loaded' (incorporating insurance, maintenance, etc. costs). The 'gasoline only' cost to drive the 381 miles between central SF and central LA is \$58.87. See: <http://www.travelmath.com/cost-of-driving/from/San+Francisco,+CA/to/Los+Angeles,+CA>. The 'gasoline only' cost to drive the 341 miles between central LA and San Jose is \$52.69. See: <http://www.travelmath.com/cost-of-driving/from/San+Jose,+CA/to/Los+Angeles,+CA>. The Authority's 'fully loaded' cost for a driver-only auto trip would be \$85.25.

³⁸ The Stagecoach Group owns Megabus. Megabus.com lists two fares between the downtowns of San Francisco and Los Angeles. See: <http://us.megabus.com>.

³⁹ Why is the Authority's approach biased? The Draft 2014 Plan's Final Technical Memorandum – Ridership and Revenue Forecasting, page 4-4 [PDF 33] says, "The approach for forecasting auto operating costs for the 2014 Business Plan is consistent with the methodology used for the 2012 Business Plan, with updates to the cost projections." The range of auto operating costs per mile in the 2014 Draft Plan [Table 4.4 –PDF 33] is 22¢-30¢. However, in 2012 Business Plan's Final Technical Memorandum – Ridership and Revenue Forecasting; at the bottoms of Table 5.9 and Table 5.10 [PDF 55-56] are the notes. "Auto Operating Cost = 20 cents per mile per person (2011\$)." and "Auto Operating Cost = 28 cents per mile per person (2011\$)." The per-mile range of costs, 22¢- 30¢ are reasonable, and for a driver-only trip yield a 403-mile driving cost range of \$89-\$121. However, as opposed to applying the financial concept of marginal costs in the costs of driving formula, one is supposed to believe that the auto driver costs, and costs for each of three passengers should be defined to be equal. Therefore, an 403-mile auto trip between Norwalk and Berkeley with four occupants' one-way would have costs in 2022 range between \$355 (4 times \$89) and \$484 (4 times \$121). The consequence for the auto trip example is that the fixed costs must absorbed three more times – truly an ill-logical approach. The

knows these results are absurd, but the Authority uses that self-promoting conceit to justify using the HSR train during the IOS-Only Phase and thereafter. The Authority's approach in the 2014 Plan is highly biased against auto use since its formula adds each passenger's costs equal to that of the driver's costs.

14. The 2014 Draft Plan continues the tradition of tautology when setting high-speed rail fares – CHSRA long ago accepted that its fares can't compete in California on a cost basis with auto operating costs, so it plans to compete with airline fares: "*Fare levels are . . . somewhat below current airfares in the longer distance travel markets and well above the out-of-pocket cost of driving in the shorter distance travel markets.*"⁴⁰

Therefore, in the Authority's past, present and future Business Plans, the costs of traveling by air between the two metropolitan areas will always be more expensive than using the HSR option because CHSRA set average airfares between the two cities as their benchmark and their HSR fares 17% cheaper. That approach is by definition tautological – 'heads I win, tails you lose.' This simplistic approach to HSR fares is an excellent marketing tool, but unrealistic. It also creates all sorts of distortions in the Authority's own pricing schemes whereby a third of all fares quoted by CHSRA must be held to no more than 83% of the average airline fares (\$86).⁴¹

In logic, a tautology (from the ancient Greek ταυτολογία) is a formula that is true in every conceivable use. That is, the premise always proves the conclusion. Making the cost of high-speed rail tickets between San Francisco and Los Angeles to be always 17% less than the average airline fares is a lesson in tautology. *Caveat Fidelis* (Believer Beware).

15. The Draft 2014 Plan's changed inflation rates are insignificant compared with their increased capital cost estimates – The Draft 2014 Plan says, "*Inflation for 2014 through 2016 is assumed to be 2 percent per year, and inflation for 2017 and beyond is assumed to be 3 percent per year.*"⁴² This provides little comfort in the face of recent rises in the estimated costs of completing the first miles.

Appendix A of the July 2013 Diminishing Prospects estimated that an HSR-Ready system (without rolling stock) for the first 29 miles would cost \$3.15 Billion. When that figure, based on the Authority's early 2013 records, is extrapolated for 130 miles of HSR-Ready track between Madera and Bakersfield section, the capital cost would be about \$14.1 Billion.⁴³ Four months later the Authority's

apples-to-apples equivalent would be to have each additional high-speed rail passenger absorbing the entire fixed and variable costs as is the first traveler – i.e. the locomotive's driver.

⁴⁰ See: California High-Speed Rail Program Revised 2012 Business Plan, April 2012, page 5-11 [PDF 119]

⁴¹ See: California High-Speed Rail Draft 2014 Business Plan Ridership and Revenue Forecasting—Draft Technical Memorandum, Table 3.1, page 3-5 [PDF 28].

⁴² See PDF 36, CHSRA, Draft 2014 Business Plan

⁴³ Madera to Bakersfield's 130 miles is 4.48 times the 29-mile CP1.

own estimated the cost of HSR-Ready track was \$13.2 Billion for the Madera to Bakersfield section – a 7% difference in cost.⁴⁴

Importantly, capital cost estimates for the first 29 miles of construction (CP1A, CP1B and CP1C) have yet to be more than 60% reliable, and those south of Fresno are even less reliable. In the ICS, which will someday be part of the IOS, the Authority faces soil subsidence and alignment through an oil patch. It is probable that a HSR-Ready, Madera-to-Bakersfield ICS cost could easily exceed \$13 Billion, even without rolling stock. The good news is that rolling stock is not needed, as there is no market to serve inside the ICS/FCS.

Even if the Authority scales down its ambitions, the *Diminishing Prospects*' report estimate to build only Amtrak-Ready track was nearly \$7 Billion (\$6.97) – about a Billion more than the Authority had in-hand or prospects for receiving.⁴⁵ The Madera to Bakersfield price tag is now nearly a \$Billion more costly than the \$6.7 Billion reported two years ago as the high estimate.⁴⁶ And despite the Superior Court's decision, the Authority's 2014 Draft Plan claims they still have " . . . \$2.6 billion (Proposition 1A) and \$3.2 billion (federal) to build the first section from Madera to Bakersfield." ⁴⁷ Denial is the first stage of accepting death.⁴⁸

16. The 2014 Draft Plan once again only gives sketchy estimates on Operating & Maintenance costs – Roundly criticized by the in 2012 GAO Infrastructure Director for failing to provide more than "*half of the operating costs are captured in a single category called Train Operations and Maintenance. In addition, the Authority did not clearly describe certain assumptions underlying both cost estimates.*" ⁴⁹

After that criticism, a reasonable assumption would be that by the time the GAO issued its final report on the project in March 2013, the Authority would have 'opened the kimono' to a fellow-government agency on its O&M costs, knowing that GAO would keep the O&M data confidential. Apparently that didn't happen, and the GAO had to say, "*The O&M model includes relevant data, but sources and variables can only be described as somewhat documented. For the most part, documentation relates how inputs are adjusted from past O&M models but fails to account for how earlier values were derived.*" ⁵⁰ And this, "*No comprehensive document exists that explains the O&M model element by*

⁴⁴ See page 12 [PDF 16] of the CHSRA, Project Update Report to the California State Legislature, November 15, 2013. Found at:

http://www.hsr.ca.gov/docs/about/legislative_affairs/SB_1029_Project_Update_Rpt_11_2013.pdf

⁴⁵ See Appendix B of *Diminishing Prospects* For the CHSRA's Initial Construction Section, Found at: <https://www.sites.google.com/site/hsrcaiffr/home/briefing-papers/07-2013-diminishing-prospects-for-the-central-valley-project>

⁴⁶ See: Parsons Brinckerhoff, Cost Changes from 2009 Report to 2012 Business Plan Capital Cost Estimates April 2012. [PDF 27] says, "*The Estimated Capital Costs included in the DEIR/S for the Merced - Fresno Section ranges from \$3.8 to \$6.7 billion in 2011 Base Year dollars.*"

⁴⁷ See the inset box on PDF 21 of CHSRA, Draft 2014 Business Plan, February 7 2014

⁴⁸ Dr. Kübler-Ross introduced denial as the first stage of her model in the 1969 book, *On Death and Dying*.

⁴⁹ Susan A. Fleming, Director of Physical Infrastructure Issues, Testimony Before the Committee on Transportation and Infrastructure, House of Representatives on High-Speed Passenger Rail, December 6th 2012.

⁵⁰ GAO-13-304, Report to Congressional Requesters, California High-Speed Passenger Rail, *Project Estimates Could Be Improved to Better Inform Future Decisions*, March 2013, page 74 [PDF 79]

element." And this *"In addition, the O&M cost estimate is not based on an approved technical baseline document, although officials state that later versions will be aligned to the Concept of Operations plan."* Finally, the GAO had to say *"While the capital investment and O&M models include a contingency element, the factors used do not appear to be based on historical data or analogous sources."*⁵¹ If not from *"historical data or analogous sources."* where did the O&M data in the Draft 2014 Plan come from?

O&M costs are one-half of the balance that proves or disproves a whether proposed project is profitable. The 2014 Draft Plan, and its technical memorandum go no further than the 2012 Plan did in describing O&M costs. Since November 2008, when Prop1A was approved, the Authority's mantra of "trust me" on O&M costs rings as hollow as it did five and a half years ago.

17. The Draft 2014 Plan lowers revenues, increases Operations and Maintenance (O&M) costs, yet somehow doesn't require an operating subsidy – The Plan says *"The updated forecasts . . . also show lower farebox revenues than projected in the 2012 Business Plan"* that O&M costs *"show an approximately 14 percent increase from the cost estimates shown in the 2012 Business Plan"* yet *"The resulting updated projections continue to show that the system will not require an operating subsidy as defined in Proposition 1A and consistent with other systems around the world."*⁵²

As with past CHSRA Business Plans, a *deus ex machina* guides the Authority's accounting. Without explanation, the operating finances defy basic economics unless the yet-to-be-revealed-and-proven financial results in the 2012 Plan showed such outstanding profits that income can be lowered and operating costs increased and the project remains profitable.

Readers of the Draft 2014 Plan will search for explanations of how all this magic happens, but will not find the details on:

- 1) how ridership increased, although there has been no further statewide survey of travelers since 2005; only useful-to-CHSRA interpretations of those surveys
- 2) how O&M costs increased (or decreased), because no government agencies or independent reviewers have had access to the data and 'secret' algorithms used to compute O&M.⁵³
- 3) how revenues and costs combine to create a high-speed rail system that *". . . will not require an operating subsidy"*

Statements leading to *". . . will not require an operating subsidy"* also defy the

⁵¹ Ibid. Page 76 [PDF 81]

⁵² See Draft 2014 Business Plan, pages 10-11 [PDF 10-11]

⁵³ Requests concerning access to public data on ridership, revenues, O&M costs and profits, and their computation, have been met with responses that say: *"This is trade secret information pursuant to Evidence Code section 1060, incorporated into the California Public Records Act through Government Code section 6254(k) and, therefore, will not be provided."* For example, see: email to Mr. Robert Prantis from Ms. Anne Parker of the Public Records Act Staff of the CA High-Speed Rail Authority, December 27th 2013.

Draft 2014 Plan's later begging for a \$50 Million operating subsidy.⁵⁴ Despite years of effort, Merlin cannot save the Authority from the rigors of Generally Agreed Accounting Principles (GAAP).

18. The Draft 2014 Plan makes false claims of the HSR system's environmental and congestion benefits –The Plan says *"The updated forecasts show higher ridership than projected in the 2012 Business Plan"* with lower farebox revenues, but *"... also a reduction in the average length of their trips compared to the data used for the 2012 Business Plan forecasts."*⁵⁵

A third of all fares (30 of the 98 estimated fares) published in the Draft 2014 Plan's technical memorandum are (by virtue of the promise to be 17% cheaper than airfares) held to no more than \$86. This is to serve the long haul riders (particularly those traveling the full distance between LA Union Station and the SF TransBay Center), and therefore the revenue differences must be made up somewhere else in the overall fare structure.⁵⁶

The answer to how revenues increase is given by the reference to *"... a reduction in the average length of their trips ..."* Translated, that means the Authority, squeezed by the legal restrictions of computing long-range fares, had to dramatically increase both the number of trips through *"updated forecasts [that] show higher ridership"* and by charging more per passenger mile for short haul (intraregional) fares.

This is bunk and chicanery. The first bit of deception derives from the both 2009 and 2011 Plans' statements. The 2009 Plan said *"Local trips within the LA Basin and within the Bay Area are much shorter than between-region trips, and have a lower per-mile fare."* and in 2011, when referring to auto travel, the Authority said; *"High speed rail is much more efficient and economical for these shorter intercity trips, yielding substantial savings in cost ..."* [Emphasis added]⁵⁷ Yet, analysis of the April 2012 CS memorandum shows the opposite is true. Local trips, such as those inside the Central Valley or inside the Bookends, have a considerably higher per mile charges than *"between-region trips"*.⁵⁸ The deception continues. In the Draft 2014 Plan, the same table of fares – but uplifted from \$83 to \$86 maximum – shows that the more local, shorter trips' fares costs multiples per mile of the Los Angeles to San Francisco fares.⁵⁹ That change – to charge short haul riders more per mile than metro center-to-metro center fares per mile – is a reversal of stated policy and promises.⁶⁰

⁵⁴ See: California High-Speed Rail Draft 2014 Business Plan, Exhibit 6.3, page 52 [PDF 52]

⁵⁵ See: California High-Speed Rail Draft 2014 Business Plan, PDF 10-11.

⁵⁶ See Cambridge Systematics for Parsons Brinckerhoff, draft technical memorandum, Ridership and Revenue Forecasting, California High-Speed Rail Draft 2014 Business Plan, Table 3.1, page 3-5, PDF 28, February 6th 2014.

⁵⁷ See: California High-Speed Rail Program, Draft 2012 Business Plan, November 1, 2011, page 1-5 [PDF 23]

⁵⁸ See: Cambridge Systematics' (CS) final technical memorandum of Ridership and Revenue Forecasting of April 12th 2012, Figure 5-2 [PDF pg. 38]

⁵⁹ See California High-Speed Rail Draft 2014 Business Plan Ridership and Revenue Forecasting—Draft Technical Memorandum, Table 3.1 – Assumed HSR Fares (in 2013 Dollars) page 3-5, PDF 28.

⁶⁰ This conclusion is also validated in the 'To Repeat' report's analysis showing that CHSRA's Medium Ridership Case produced revenues per passenger mile of 23¢ during the years of Blended Phase 1 operations, whereas the revenues per passenger mile will be 29¢ PPM during the early years of operations. These would be years

The second bit of deception is inherent in statements about the reduction of congestion and the improvement of air quality. In 2012, CHSRA said high-speed rail helped improve the environment.⁶¹ The Draft 2014 Plan says *"The high-speed rail system will help reduce congestion on the state's highways and at its airports, will help the state improve air quality and meet its greenhouse gas reduction goals, and put thousands of people back to work."*⁶²

But exactly the opposite will happen. Local riders will react to a doubling or tripling of their presently subsidized fares. Despite the termination of Amtrak San Joaquin Line's service in the Valley, riders still have cheaper local transport alternatives: subsidized buses, shared rides in autos or private vans. It should also be clear that 'Bookends' riders on Caltrain and Metrolink aren't going to see a two or eight-minute savings of travel time being worth spending 3-4 times the Caltrain or Metrolink subsidized ride. They will choose their travel mode with their pocketbooks.

Consequently Central Valley Amtrak riders will defect to a more affordable transport mode when CHSRA eliminates subsidies to their fares by eliminating the Amtrak service; namely autos and trucks. Caltrain or Metrolink riders will likely stay with their subsidized rides, as yet there is no discussion about eliminating those agencies operating subsidies. If anything, the train will not help congestion and will not bring improved air quality – it will contribute to air pollution in the Central Valley and, at best, not help solve air pollution at the Bookends.

19. The Draft 2014 Plan excludes Anaheim during the IOS, the Bay to Basin, and even during Phase 1's operations – To Anaheim or not to Anaheim: that is the question. AB3034 is riddled with references about Phase 1 going as far south as Anaheim.⁶³ Prop 1A says *"Of the total amount . . . to develop and construct a high-speed train system that connects San Francisco Transbay Terminal to Los Angeles Union Station and Anaheim . . ."* And a 2009, post election 'Fact Sheet' says *"In 2008, the cost of the Anaheim-to-San Francisco system was estimated at \$33.6 billion (in 2008 dollars)"* In the 2012 Draft Plan (November 2011) Anaheim is not only part of the Full Phase 1, it is also part of the proposed Phase 1 Blended system.⁶⁴ Anaheim was anchored into voters and high-speed rail planners thinking until early 2012.

In April 2012 the Authority had to scramble when someone asked something like: "What happened to Anaheim in the new Business Plan?" Perhaps it was left out because its absence brought down the Phase 1 capital costs. But at that

like 2025 when the IOS is first projected to be generating revenues; and the IOS has the higher pricing strategy seen in Figure 3.

⁶¹ See California High-Speed Rail Program; Revised 2012 Business Plan; April 2012, page 1-5 [PDF 33]. *"High-speed rail is much more efficient and economical for these shorter intercity trips, yielding substantial savings in cost, fuel, safety, and time, as well as environmental benefits"*

⁶² See California High-Speed Rail Draft 2014 Business Plan, PDF 17

⁶³ Article 2, Section 2704 of AB3034 not only says that going to Anaheim is the intent of the Legislature, but repeats the Anaheim terminus as being part of a May 2007 Phase 1 plan adopted by the Authority itself, and lists Anaheim as part of the Los Angeles to Irvine corridor.

⁶⁴ See Exhibit ES-1 page ES-7 [PDF 13] of California High-Speed Rail Program, Draft 2012 Business Plan, November 1, 2011.

month's Board meeting, it was put back in to the high-speed rail planning for Phase 1 after Board Member Mike Rossi proposed the Board reinstate it.⁶⁵ That supposedly solved "the case of the missing Anaheim."

Two years later, Anaheim is again the southern terminus of the system and shown as part of the Authority's fare structure.⁶⁶ But then it disappears again. The 2014 Draft Plan's Ridership and Revenue Forecasting technical memorandum clearly states that the Southern Terminus of high-speed rail is Los Angeles – with "Metrolink connections at Los Angeles Union Station."⁶⁷

Since 2007, Anaheim has been counted as a portion of Phase1, and was reinstated in 2012. It is likely to cost another \$2-\$3 Billion dollars to build the more than 25 mile connection to HSR-Ready specifications. But now, on the subject of Anaheim in Phase 1, the Authority's own document contradicts itself.

20. The Draft 2014 Plan purposely misleads by claiming that high-speed rail systems are privately operated – Except in cases where the private investors' capital is not at risk, the Authority's claims of private sector participation in HSR projects are specious. The 2014 Draft Plan says, "*Many high-speed rail systems across the globe rely on the private sector to design, construct, operate, and maintain the system. In addition, many other high-speed rail systems also depend on a level of private-sector investment to fund the project.*"⁶⁸

Certainly the private sector contractors design, construct and often maintain HSR systems for profit. All HSR systems, with the possible exception of China, were designed and built by private companies – which makes California's proposed system an anomaly. Many HSR systems contract out infrastructure maintenance, and some lease rolling stock from specialized private leasing companies. But these reimbursed functions are not based on private, at-risk capital put into HSR.⁶⁹

But despite what European governments may name their high-speed rail operators, they all are government owned or subsidized like Eurostar. The Plan's statement is akin to saying Amtrak is a private rail operator. Technically it is, but it's stock is totally owned by the US Government and it has required an average of \$1 Billion a year subsidy.⁷⁰

⁶⁵ Vice Chairman Rossi said something like; "I would like to move that we adopt this business plan, including the amended language on Anaheim. And I'm looking for a second." See; http://www.hsr.ca.gov/docs/brdmeetings/2012/April/brdmtg041212_transcript.pdf

⁶⁶ See Cambridge Systematics, April 2012 Technical Memorandum, Figure 5.2 [PDF 38] and page 6 of the Fleeing Local Riders report. It also shows that fares are constrained by fiat to \$86 – not \$83 as in that report's 2012 predecessor

⁶⁷ See: Table 3.2, page 3-6 [PDF 29], the Ridership and Revenue Forecasting report, prepared by Cambridge Systematics, February 6, 2014. Table 3.1 also shows that local riders are going to get even more efficiently fleeced than shown in CS' April 2012 Technical Memorandum, Figure 5.2 [PDF 38]. For example, two years ago to go from the SF TransBay Terminal to Visalia via HSR cost \$72: now that ride is \$75. And from LA Union Station to Anaheim has gone up \$1 to \$29.

⁶⁸ See PDF 30, CHSRA, Draft 2014 Business Plan, February 7 2014

⁶⁹ The authors are grateful for the guidance by Lou Thompson, Chair of the Peer Review Group, in clarifying several matters concerning private participation in worldwide HSR systems in this and the following two paragraphs.

⁷⁰ Chairman Lou Thompson, in a 2011 Peer Group Report said on page 17 [PDF 21-22] "Amtrak (officially the

Technically the Taiwan HSR project is a private sector project, but their government had to take over construction when the developers went bankrupt, and still invests in the company to keep it in operation. Three of the seven Japanese HSR operating companies (East, West and Central) are private, though the government's general fund had to absorb enormous debt to continue building and operating the HSR system. The French HSR system had various private financing schemes for the fixed infrastructure, but these were really financing leases, and the government's SNCF takes the risks that demand will not cover operating costs. The UK's High-Speed train (HS1) and the Channel Tunnel are officially private, though both went through various "re-financings" that lost investors nearly everything.

There are no private HSR operators in France, Spain and Germany. The entire financial risk is the public's. Italy's private HSR train is faltering financially: the Netherlands system is not financially stable and governments are being forced to choose what to do with such huge capital assets, abandon them or subsidize operations forever.

21. For at least the first five years of operations the 2014 Draft Plan ridership forecasts are indefensible – The 2014 Draft Plan says; "*The Medium outcome for the ridership forecast shows an overall ridership greater than 10 million trips in 2025 . . .*"⁷¹ In 2022, when the Initial Operating Segment-Only (IOS-Only) Phase begins and is supposedly profitable, ridership is forecasted to be about 4.6 Million.⁷²

Figure 2 (see next page) shows the growth rate in Central Valley Amtrak riders of 6.6% between 2012 and 2013.⁷³ Using that record growth rate indicates that in 2021, before the IOS-Only Phase begins, Central Valley ridership would be 2.03 million.

However, according to the Authority, the following year (2022), when the IOS operations begin, ridership will more than double to 4.6 million. That's more than a 100%, increase – not credible.

National Railroad Passenger Corporation) was created in 1970 . . . operates all intercity rail passenger trains in the U.S." No private money is at risk to be lost when Amtrak's expenses exceed revenues. Thompson continues: "Overall, Amtrak requires in the range of US\$1 billion per year in financial support and has, since its creation in 1970, absorbed well more than US\$40 billion (2010\$) in support."

⁷¹ See: California High-Speed Rail Draft 2014 Business Plan, PDF 42

⁷² See: California High-Speed Rail Draft 2014 Business Plan Ridership and Revenue Forecasting—Draft Technical Memorandum, Figure 3.1 [PDF 25]. Estimates for 2022 and onwards are from Exhibit 4.2 [PDF 43] of the 2014 Draft Business Plan.

⁷³ Amtrak San Joaquin ridership 2012-2013 growth was 6.6%. The compound growth rate of 6.6% was used to forecast growth 2013-2021.

<p align="center">Figure 2 Forecasted Ridership During IOS-Only Phase And Years 1 and 2 Of B-to-B Operations</p>			
IOS-B2B Ops Year	Year	Central Valley Ridership 2013-2030	Sections Available for Passengers
	2013 actual ⁷⁴	1.2 million	Central Valley
	2017 est.	1.6 million	growth at 6.6% pa 2013-2021
	2021 est.	2.0 million	year before IOS begins
1	2022 est.	4.6 million	IOS-Only – CHSRA estimate
2	2023 est.	6.3 million	IOS-Only – CHSRA estimate
3	2024 est.	8.1 million	IOS-Only – CHSRA estimate
4	2025 est.	10.4 million ⁷⁵	IOS-Only – CHSRA estimate
5	2026 est.	12.3 million	IOS-Only – CHSRA estimate
6	2027 est.	14.6 million	B-to-B becomes operational
7	2028 est.	17.4 million	B-to-B
8	2029 est.	20.6 million ⁷⁶	Phase 1 becomes operational
9	2030 est.	24.4 million ⁷⁷	Phase 1

Figure 2 shows the Authority expects ridership to increase nearly three-fold during the five years of the IOS-Only Phase. That 28% per year growth would be most enviable, but it's also not credible. It's particularly not credible because, as shown in the report 'Fleecing' Local Riders While Big City Executives Ride Cheaper, the fares for taking high-speed rail during and after the IOS is built will be multiples of fares for the present, subsidized Amtrak San Joaquin line.⁷⁸ The is almost no chance that twice as many riders will travel on unsubsidized high-speed rail as traveled on subsidized Amtrak. Why should they?

22. The Draft 2014 Plan's ridership forecast is a static percent of the state's population forecasts – Not only does the Authority double ridership along the San Joaquin Amtrak corridor the year the IOS begins, then doubles ridership every three years (28% growth pa) while offering no travel time or cost advantage, but Cambridge Systematics' (CS) model forecasts follows a predictable path after the IOS. Specifically, CS' forecasts 73% of California's population will be riders every year into the future.

Surely there will be periods of economic change when ridership will decline, while in other periods ridership will grow. Surely, the introduction of new transportation and communications technologies will have an impact on ridership. Surely operations improvements or interruptions in one or more years will change ridership. But in the CS model, those things are not allowed to happen. Ridership stays a constant, dependent variable of population.

⁷⁴ For 2013 ridership on the San Joaquin line, see; Tim Sheehan, Fresno Bee, October 14, 2013 'Amtrak's San Joaquin trains set ridership record. Found at <http://www.fresnobee.com/2013/10/14/3553276/amtraks-san-joaquin-trains-set.html>

⁷⁵ Estimates for 2022-2024 are from Exhibit 4.2 [PDF 43] of the Draft 2014 Business Plan

⁷⁶ See: California High-Speed Rail Draft 2014 Business Plan Ridership and Revenue Forecasting—Draft Technical Memorandum, PDF 24 and PDF 25

⁷⁷ See Exhibit 4.1 [PDF 42] of the Draft Plan

⁷⁸ This Briefing Paper can be found at www.sites.google.com/site/hsrcaiffir

23. The 2014 Draft Plan continues the 2012 Plan's fleecing of local riders – The Authority's Draft 2012 Business Plan (November 2011) said "*Local trips within the LA Basin and within the Bay Area are much shorter than between-region trips, and have a lower per-mile fare.*"⁷⁹ Five months later, the Authority flip-flopped on fare structure policy.

Analysis of the April 2012 Cambridge Systematics technical memorandum shows the opposite policy. It shows local trips, such as those inside the Central Valley or inside the Bookends, have a considerably higher per mile charges than "*between-region trips*".⁸⁰ A high-speed rail ride within the Central Valley will cost from 30% to 64% more than it would on Amtrak.⁸¹ A high-speed rail rider will pay two to three times more than Metrolink charges for an equivalent distance Southern California (SoCal) ride.⁸² For one of the shortest Northern California HSR rides – from the SF Transbay Terminal to Millbrae (15 miles) – the HSR rider would pay \$16, versus \$5 today on Caltrain.⁸³

It is a logical industry practice to charge more per mile for shorter rides than longer ones. Logical, because the time lost time for stops and the extra fuel consumption costs of multiple stops must be imputed into either a profit equation or the farebox revenue ratio in the case of public transport. But it is not honest to say one thing in a business plan and another in detail documents.

The 2014 Draft Business Plan the Authority claims no bias in its fare structure:

*"In developing these forecasts, the Authority's consultants **have not assumed any revenue optimization that would result from adjusting fares to optimize yields** on specific markets such as short distance and commuter trips either in the San Francisco Bay Area and/or in the Los Angeles Basin."*⁸⁴

On the same page the Authority says the fare structure is as in 2012:

*"The consultants have assumed the same high-speed rail fare structure as assumed in the 2012 Business Plan forecasts and presented in the Draft 2014 Business Plan Ridership and Revenue Technical Memorandum"*⁸⁵

But, in 2012 the Authority did exhibit bias and revenue optimization, and have

⁷⁹ See: California High-Speed Rail Program, Draft 2012 Business Plan, November 1, 2011, page 1-5 [PDF 23]

⁸⁰ See: California High-Speed Rail Authority: Report to the Legislature, December 2009, PDF pg. 72. In the 2008 Business Plan, page 18, Figure 20, [PDF pg. 21] that assertion comes out as "*Short trips entirely inside the Los Angeles/Anaheim area or the San Francisco Bay Area make up 30% of the trips, but only 8% of the revenue because of the shorter length and lower fare structure.*"

⁸¹ See Figure 3, page 8 of 'Fleecing' Local Riders While Big City Executives Ride Cheaper. This Briefing Paper can be found at www.sites.google.com/site/hsrcaliffr

⁸² These Average Fares are computed by taking the sum of the sample fares and dividing this sum by the sum of the sample miles, again derived from Google Maps' driving distances.

⁸³ Northern California Caltrain ride fares comes from their electronic files, found at <http://www.caltrain.com/Fares/farechart.html>

⁸⁴ See page 43 [PDF 43] Draft 2014 Business Plan

⁸⁵ Ibid.

continued that tradition in 2014. The paper, 'Fleecing' Local High-Speed Train Riders While Big City Executives Ride Cheaper demonstrates that local riders will pay three-to-four times the per mile charge as riders in the artificially-constrained SF-to-LA market.⁸⁶ For example, from San Fernando to LA's Union station the HSR fare will be \$25; three times the \$8 Metrolink fare. On Metrolink the fare from LA's Union Station to Norwalk would be \$7.25: by HSR that ride would cost \$25: more than three times Metrolink's fare. On the SF Peninsula, from the SF TransBay Terminal to Millbrae (SFO), a HSR rider would pay \$16, versus \$5 today on Caltrain. That's \$1.07 per mile for a HSR ride versus 33¢ per mile for a Caltrain ride.⁸⁷

The same revenue optimization from local rides is true in the 2014 Ridership and Revenue Forecast. Table 3.1 page 3-5 [PDF 28] shows fares constrained to now-\$86 (no longer \$83).⁸⁸ Assuming that inflation in the intervening two years is about 3.6%, the 2012 and 2014 fares are about the same.⁸⁹ For example, two years ago to go from the SF TransBay Terminal to Visalia via HSR cost \$72: now that ride is \$75. And from LA Union Station to Anaheim has gone up \$1 to \$29.

Like the April 2012 Business Plan, the Authority's 2014 Draft Business Plan says one thing about the structure of per mile fares, yet their internal documents show another. In a court of law, that would be called deception.

⁸⁶ See: Cambridge Systematics, April 2012 Technical Memorandum

⁸⁷ Ibid. For the examples given see pages 8-9. Such analyses are based on Figure 5.2 [PDF 38] and are the data for these conclusions comes from page 6 of the Fleecing Local Riders report

⁸⁸ See: Ridership and Revenue Forecasting report, prepared by Cambridge Systematics, February 6, 2014, available at http://www.hsr.ca.gov/About/Business_Plans/Draft_2014_Business_Plan.html

⁸⁹ See: Cambridge Systematics, April 2012 Technical Memorandum, Figure 5.2 [PDF 38] and page 6 of the Fleecing Local Riders report

2014 Business Plan RECORD DETAIL

Record Date : 4/4/2014

Submission Date : 4/4/2014

Affiliation Type : Individual

Interest As : Individual

Submission Method : Project Email

First Name : Frank

Last Name : Dilling

Business/Organization :

City :

County :

Zip Code : 00000

Stakeholder Comments/Issues : Kill this monstrosity bill. Apply the money to lowering the debt.

Frank Dilling

Draft Business Plan Comment

Type :

2014 Business Plan RECORD DETAIL

Record Date :	4/4/2014
Submission Date :	4/4/2014
Affiliation Type :	Individual
Interest As :	Businesses And Organizations
Submission Method :	Letter
First Name :	Jerry
Last Name :	Wilmoth
Business/Organization :	Union Pacific Railroad
City :	Roseville
County :	
Zip Code :	95747
Stakeholder Comments/Issues :	
Draft Business Plan Comment Type :	
Attachments :	UPRR 2014BP comments.040414.pdf (969 kb)

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April 3, 2014

VIA OVERNIGHT DELIVERY

Jeff Morales
Chief Executive Officer
California High-Speed Rail Authority
770 L Street, Suite 800
Sacramento, CA 95814

Re: Comments on CHSRA's Draft 2014 Business Plan

Dear Mr. Morales:

Union Pacific Railroad provides this letter in response to the California High-Speed Rail Authority's invitation to submit comments on its Draft 2014 Business Plan.

Union Pacific Railroad Company

Founded in 1862 and now the largest Class 1 railroad in California, Union Pacific Railroad owns, operates, maintains, and dispatches a significant network of critical freight rail routes in California and 22 other states. In California alone, Union Pacific has 4,872 employees and 3,283 route miles of track. In 2013, it spent over \$1 billion of its private funds in California in payroll, purchases, and capital to operate and maintain its infrastructure and expand its capacity in the state.

Through these activities and investments, Union Pacific plays a vital role for the national and California economies by maintaining and expanding its ability to move freight by rail; to serve the state's ports and other shippers; and to relieve the state's crowded highway network by facilitating the transportation of goods by rail rather than by truck, thus reducing traffic congestion, air-pollutant emissions, greenhouse gas emissions, and energy consumption.

July 2012 Memorandum of Understanding

In 2008, voters approved Proposition 1A, which authorized issuance of \$9.95B in state bonds to fund the beginning of construction of a high-speed passenger rail system. From the outset, Union Pacific communicated with CHSRA regarding the need to construct the HSR project in a manner that would not conflict with Union Pacific's interests. As Union Pacific



expressed in meetings and written correspondence, the project could not be built on Union Pacific's private property, could not be built in a manner that would limit Union Pacific's ability to serve current and future freight rail customers, and could not increase Union Pacific's safety and liability risks.

In April 2012, CHSRA presented a new Revised 2012 Business Plan. Its original plans called for beginning construction on each end and building a HSR system on a new right of way that would be dedicated exclusively to HSR operations. The new plans called for construction of an initial 130-mile segment in the Central Valley and extending north and south when funding became available. CHSRA would achieve independent utility for this first phase of track (a requirement of the federal funding) by operating conventional passenger trains at speeds up to 110 m.p.h. instead of the usual top speeds of 79 m.p.h. already in service on existing adjacent tracks along this same route.

Union Pacific noted three aspects of the 2012 Revised Business Plan that would cause particular impact to the safety, capacity, and functionality of its freight rail franchise:

1. Blended Service: At each end of the new CHSRA track and future extensions of it, CHSRA proposed transferring its passengers to additional passenger trains that would operate in new service on existing freight railroad tracks, an idea it called "blended service." The 2012 Business Plan did not contemplate building the capacity improvements that would be necessary to support new passenger trains that would be added as part of blended service.

2. Blended Operations: At each end of the new CHSRA track, including future extensions, CHSRA would operate its electrified trains within the same right of way and in some places on the same tracks as conventional passenger trains and freight trains, an idea it called "blended operations."

3. Boxing In: Although the 2012 Revised Business Plan did not use the phrase "boxed in," the new plan proposed constructing portions of a new dedicated high-speed rail right of way in locations where it would confine Union Pacific's tracks between existing highways or other infrastructure on one side and the new CHSRA tracks on the other side, leaving Union Pacific "boxed in" and unable to serve future customers on either side of its tracks.

Union Pacific voiced its concerns about these and other issues. In response, CHSRA initiated negotiations among Union Pacific, CHSRA, Caltrans, the Capitol Corridor Joint Powers Authority, and the San Joaquin Regional Rail Commission. The Federal Railroad Administration

helped facilitate the process. The parties emerged from those discussions with a Memorandum of Understanding and Implementing Agreement Related to High-Speed Rail Development in California dated July 12, 2012 (the "MOU"). The MOU is a binding contract that provides a framework for protecting Union Pacific's interests while describing a path forward for the construction of the CHSRA project and the addition of new passenger trains in support of blended service.

Comments on Draft 2014 Business Plan

In this context, Union Pacific offers the following specific comments on CHSRA's Draft 2014 Business Plan.

1. CHSRA Must Comply with the Terms of the MOU When It Constructs and Operates Its High-Speed Rail System.

Many parts of the Draft 2014 Business Plan are ambiguous and possibly contradictory, leaving Union Pacific uncertain whether CHSRA's plans may conflict with the terms of the MOU. Whatever CHSRA's specific intentions may be, the construction and operation of the high-speed rail system must comply with the MOU.

2. Blended Service and Blended Operations Must Be Implemented Consistent With the Terms of the MOU.

Over the course of the past several months, CHSRA has changed its plans for blended service. In response, Union Pacific proposed an amendment to the MOU to provide CHSRA and the passenger operators greater flexibility in when and how to add more passenger trains on Union Pacific's routes. CHSRA and CalSTA rejected that proposal. This means that the original terms of the MOU remain in effect.

It is unclear whether the Draft 2014 Business Plan may propose a different approach to blended service and blended operations. Whatever CHSRA's plans may be, these comments reaffirm that Union Pacific has no obligation to allow additional passenger trains to use its routes other than under the terms of the July 2012 MOU.

3. CHSRA Will Not Electrify LACMTA's Line Between Palmdale and Los Angeles Unified Station.

The Los Angeles County Metropolitan Transportation Authority ("LACMTA") owns a right of way on which the Southern California Regional Rail Authority operates a commuter rail service between Palmdale and the Los Angeles Unified Station. Union Pacific operates on this

same line on a freight rail easement that its predecessor-in-interest, Southern Pacific Transportation Company, reserved when it sold the line to LACMTA. In the MOU, CHSRA committed not to ask LACMTA to electrify this line:

“CHSRA will not ask LACMTA to electrify any of the routes operated by Southern California Regional Rail Authority (“SCRRA”) on which UPRR also operates between Palmdale and Los Angeles Union Station (“LAUS”). CHSRA intends to build a dedicated HSR track between Palmdale and LAUS. CHSRA will not operate on tracks on which SCRRA and UPRR both operate between Palmdale and LAUS. Any electrification facilities that CHSRA or the Passenger Operators may install near UPRR right of way will be built in such a way that the facilities do not limit UPRR’s use of its property for freight railroad purposes, including safety activities and maintenance.” MOU §2(L).

Since execution of the MOU, in conversations and in the Draft 2014 Business Plan, CHSRA has implied or directly stated that it wishes to operate in electrified service on all or part of the LACMTA line between Palmdale and LAUS. Union Pacific reminds CHSRA that it contracted not to electrify this line or to build electrified facilities near any Union Pacific right of way in a way that limits Union Pacific’s use of its property for freight railroad purposes.

4. CHSRA Cannot Operate at High Speed on Tracks Shared with Freight Trains in Southern California.

The Draft 2014 Business Plan appears to describe a new plan for CHSRA to operate on tracks in Southern California that are owned by LACMTA and shared with Union Pacific. CHSRA does not acknowledge Union Pacific’s existing rights on these tracks or the operational and safety conflicts that would arise with attempting to operate freight trains, conventional passenger trains, and high-speed passenger trains on the same track. CHSRA’s plans cannot conflict with Union Pacific’s rights on these corridors.

5. The Draft 2014 Business Plan Does Not Recognize Union Pacific’s Exclusive Rights to Operate Intercity Passenger Service on the San Francisco Peninsula.

CHSRA plans call for operating on tracks owned by the Peninsula Corridor Joint Powers Board (“JPB”) between San Francisco and San Jose. In 1991, Union Pacific’s predecessor, Southern Pacific, sold this right of way to the JPB and reserved an easement for freight operations. Southern Pacific also reserved the exclusive right to operate intercity passenger

service on these tracks. Union Pacific now holds those rights. The Draft 2014 Business Plan does not acknowledge Union Pacific's rights, and CHSRA has not secured any rights to operate on this route.

6. CHSRA May Not Electrify Its Routes in a Manner That Conflicts with the Operation of Railroad Signals, Positive Train Control, or Other Equipment or Systems on Union Pacific's Routes.

The Rail Safety Improvement Act of 2008 mandates that all Class 1 railroads and all entities providing regularly scheduled intercity and commuter rail passenger transportation must implement a positive train control ("PTC") system on significant portions of the national rail network by December 31, 2015. 49 USC §20157. PTC is an integrated communication and control system that is being developed as a new kind of train control system that will prevent trains from exceeding track speed limits or violating signals. PTC's fail-safe condition will be to automatically slow or stop a train.

CHSRA's plans call for using 25kV overhead catenary to provide power for its high-speed trains. Operating CHSRA trains will create electromagnetic fields whose strength and range will be affected by the voltage of the CHSRA system and the speed of CHSRA trains. There are no railroads in the United States that already use 25kV electrical catenary to operate trains at the high speeds contemplated for the CHSRA system. CHSRA has performed no testing to investigate whether operating electrified trains of the design, voltage, and speed of the planned CHSRA trains may cause electromagnetic interference or other kinds of interference with the operation of conventional railroad signals or PTC systems of the kind that will be used in California.

CHSRA must design, construct, operate, and maintain its high-speed rail system in a manner that ensures that it will not interfere with the safe and reliable operation of railroad signals (including automatic grade crossing warning devices), PTC systems, or other equipment or systems located or used on property that Union Pacific owns or on which Union Pacific operates. Again quoting the MOU, "Any electrification facilities that CHSRA or the Passenger Operators may install near UPRR right of way will be built in such a way that the facilities do not limit UPRR's use of its property for freight railroad purposes, including safety activities and maintenance." MOU §2(L).

7. Additional Agreements with Union Pacific.

The draft 2014 business plan notes that constructing CHSRA's proposed project will require multiple definitive agreements with freight railroads. Union Pacific has been working in good faith with CHSRA to advance discussions about those agreements, including agreements related to real estate transactions. Any suggestion that Union Pacific may be responsible for delays or increased project costs because it has acted unreasonably or in bad faith is false. As it always has, Union Pacific reserves all rights it has related to the negotiation, execution, and enforcement of all necessary agreements.

8. Dedication of Union Pacific Resources.

On page 70, the draft business plan states: "In addition, the terms of these agreements [with freight railroads] and constraints imposed by the railroad's *[sic]* normal operations may negatively impact (implicit) productivity assumptions made during the development of the program's schedule and cost estimate, as well as the eventual contractor's possible means and methods."

If this statement suggests that anything about Union Pacific's normal operations has or will wrongfully impact CHSRA's productivity assumptions or any other part of the CHSRA project, it is incorrect. CHSRA is solely responsible for any assumptions it has made and any communication with Union Pacific that may be needed in relation to the development of CHSRA's plans.

Union Pacific has advised CHSRA staff on numerous occasions over a considerable period of time about Union Pacific's processes, protocols, scheduling requirements, methods and timelines for material procurement, and other matters of direct relevance to the various ancillary or sub-projects, such as grade separations, track relocations, and utility relocations, to be undertaken by CHSRA or the numerous other agencies that are performing work in support of the CHSRA network. Union Pacific has been very clear about why it is not possible to quickly deploy personnel and other resources on short notice to meet CHSRA's needs. CHSRA must commit to a realistic and comprehensive schedule for its activities in order for Union Pacific to prepare to meet the significant demands that a project such as this will put on Union Pacific's resources.

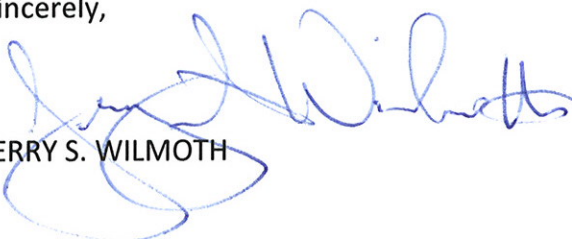
In this context, Union Pacific notes that it has accrued hundreds of thousands of dollars in expenses over a period reaching back to 2012 for which CHSRA has not yet reimbursed the company. The parties are in the process of amending their reimbursement agreement to make

it possible for CHSRA to use federal funds to pay these obligations. In the meantime, this issue further illustrates why Union Pacific requires greater certainty in CHSRA's schedule and processes before Union Pacific can plan for and commit resources to support the high-speed rail project.

Conclusion

Union Pacific looks forward to continuing to work with CHSRA consistent with the terms of the MOU, the comments above, and the other agreements the parties are negotiating.

Sincerely,



JERRY S. WILMOTH

JSW/jlg

cc: Tom Fellenz, Chief Counsel, CHSRA
David Kutrosky, Managing Director, CCJPA
Stacey Mortensen, Executive Director, SJRRC
Bruce Roberts, Division Chief (Acting), Caltrans Division of Rail
Brian Kelly, Secretary, California State Transportation Agency
Michael Scanlon, Executive Director, PCJPB
Arthur Leahy, Chief Executive Officer, LACMTA
Karen Hedlund, Deputy Administrator, FRA

2014 Business Plan RECORD DETAIL

Record Date : 4/4/2014

Submission Date : 4/4/2014

Affiliation Type : Local Agency

Interest As : Local Elected

Submission Method : Letter

First Name : Casey

Last Name : Bingham

Business/Organization : City of Santa Clarita

City : Santa Clarita

County : Los Angeles

Zip Code : 91355

Stakeholder Comments/Issues : Dear Chairperson Richard,

Attached is a copy of the signed comment letter from the full Santa Clarita City Council regarding the CHSRA Draft 2014 Business Plan for your records. This letter was approved by the City Council at the March 25, 2014 City Council meeting.

Draft Business Plan Comment Type :

Attachments : Dan Richard CHSRA 2014 Business Plan.pdf (2 mb)



City of
SANTA CLARITA

23920 Valencia Boulevard • Suite 300 • Santa Clarita, California 91355-2196

Phone: (661) 259-2489 • FAX: (661) 259-8125

www.santa-clarita.com

March 28, 2014

Laurene Weste
Mayor

Mr. Dan Richard, Chairperson
California High-Speed Rail Authority
770 L Street, Suite 800
Sacramento, CA 95814

Marsha McLean
Mayor Pro Tem

SUBJECT: COMMENTS REGARDING CALIFORNIA HIGH SPEED RAIL
AUTHORITY DRAFT 2014 BUSINESS PLAN

TimBen Boydston
Councilmember

Dear Chairperson Richard:

Frank Ferry
Councilmember

The following are comments from the Santa Clarita City Council regarding the
2014 California High Speed Rail Authority (CHSRA) Draft Business Plan.

Bob Kellar
Councilmember

The Council recognizes and appreciates the efforts over the past two years by
CHSRA staff and being responsive to the community's concerns. We are grateful
for the visits to Santa Clarita from Jeff Morales, CHSRA Executive Director and
Michelle Boehm, CHSRA Southern California Regional Director to learn
firsthand of our community's concerns regarding the proposed project.

On February 5, 2014, the CHSRA hosted a Stakeholder Working Group (SWG)
meeting for the Santa Clarita area at the City's Sports Complex. At this meeting,
Michelle Boehm gave a status report on the Southern California project section
from Palmdale to Union Station along with an update on the proposed staff
recommendations of alignments for inclusion in the Supplemental Alternative
Analysis (SAA). The Council would like to thank the staff for recommending the
two mile tunnel extension alignment in Sand Canyon as one of the alternatives for
the Board's consideration to be included in the SAA.

At this meeting, Ms. Boehm stated CHSRA staff is currently studying the
feasibility of another alignment alternative — a direct route from Burbank, near
Bob Hope Airport, to the Palmdale high speed rail station that would bypass Santa
Clarita entirely.

Mr. Dan Richard, Chairperson

March 28, 2014

Page 2

City staff has reviewed the 2014 Draft Business Plan and appreciates the CHSRA's efforts to provide updated financial and ridership forecasts. The City is most concerned with the impacts the construction and operation of the high speed train would have on local residents. Given the substantial negative impacts to the local neighborhoods, schools, and a planned job center, the City Council does not support the proposed surface alignments through the Santa Clarita Valley. While there remains great debate over the future viability of the proposed project, as the environmental process is currently moving forward, the City Council strongly supports the direct alignment between Palmdale and Burbank as the preferred alternative. This alignment is more direct, would eliminate impacts to our community, and would create a more attractive alternative to passengers. Supervisor Antonovich supported a similar preference in his letter to you, dated October 11, 2013.

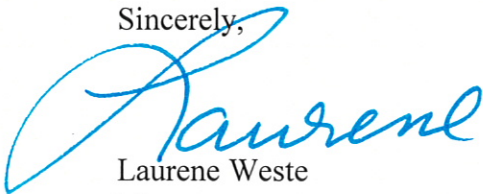
The Council recognizes there may be some concerns from the City of Burbank and affected communities if the Palmdale to Burbank direct alignment alternative is included in the SAA. The Council requests that the CHSRA Board please be responsive to the concerns of the City of Burbank and the affected community residents.

Given the immense importance of this issue to Santa Clarita and other Los Angeles County communities, the City Council requests that the CHSRA Board meet in Southern California, not Sacramento, when the decision is made to include the new alignment in the SAA. Holding the meeting in Los Angeles would provide residents, elected officials, and business leaders the opportunity to address the CHSRA Board and to facilitate a more interactive dialogue.

We appreciate your willingness to help resolve the City's concerns and find an agreeable solution to mitigate the high-speed rail system's impacts to the City of Santa Clarita.

If you or your staff should require any additional information regarding this letter please contact Michael Murphy, Intergovernmental Relations Officer, at (661) 255-4384, or by email at mmurphy@santa-clarita.com.

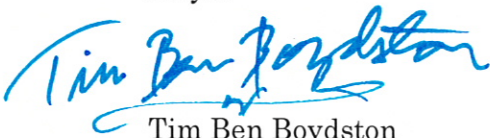
Sincerely,



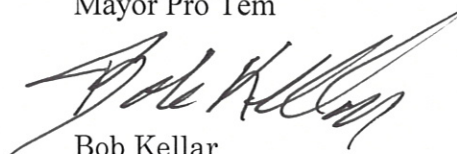
Laurene Weste
Mayor



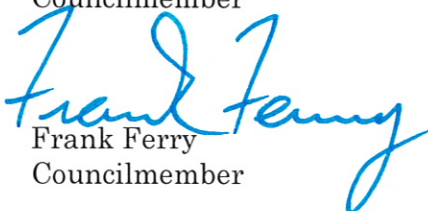
Marsha McLean
Mayor Pro Tem



Tim Ben Boydston
Councilmember



Bob Kellar
Councilmember



Frank Ferry
Councilmember

Mr. Dan Richard, Chairperson

March 28, 2014

Page 3

:MPM:cb:na

S:\MS\Casey B\CHSRA\Council- Dan Richard Bypass Alignment 2014FINAL.doc

cc: Kenneth W. Striplin, City Manager
Leadership Team
Jeff Morales, CHSRA Executive Director
Michelle Boehm, CHSRA Southern California Regional Director
Santa Clarita High Speed Rail Task Force

2014 Business Plan RECORD DETAIL

Record Date : 4/6/2014
Submission Date : 4/6/2014
Affiliation Type : Individual
Interest As : Individual
Submission Method : Website
First Name : Robert
Last Name : Allen
Business/Organization :
City : Livermore
County : Alameda
Zip Code : 94551

Stakeholder Comments/Issues : High Speed Rail needs a secure route: fenced, with no grade crossings. "Blended Rail" as proposed would be highly vulnerable to accident, sabotage, and train delays. It would be neither safe nor reliable, as postulated in 2008 Prop 1A.

North from Merced, plan HSR in these phases:

Phase 1: Merced to San Jose
Transfer at San Jose to Caltrain, Capitol Corridor, and planned Silicon Valley BART.

Phase 2: Merced to Sacramento

Phase 3: San Jose to Oakland
Upgrade UP/Amtrak East Bay Mulford route to BART overpass in Oakland ("San Francisco Bay Rail Hub"?).

Phase 4: Oakland to Sacramento
Upgrade UP/Capitol Corridor route.

Phase 5: Oakland to San Francisco
Defer pending Caltrain total grade separation.

* BART trains about every 4 minutes to four downtown San Francisco stations in 6-10 minutes.

Squander no more HSR funding on Caltrain or unsafe "Blended Rail". Delete reference to "One-seat ride".

Robert S. Allen (925) 449-1387
223 Donner Avenue, Livermore, CA 94551-4240
BART Director, District 5 (1974-1988)
Retired, SP (now UP) Western Division, Engineering/Operations

**Draft Business Plan Comment
Type :**

2014 Business Plan RECORD DETAIL

Record Date : 4/6/2014
Submission Date : 4/6/2014
Affiliation Type : Individual
Interest As : Individual
Submission Method : Website
First Name : Robert
Last Name : Allen

Business/Organization :

City : Livermore
County : Alameda
Zip Code : 94551

Stakeholder Comments/Issues : Corrected copy Phase 5 s/b San Jose to San Francisco;
High Speed Rail needs a secure route: fenced, with no grade crossings.
"Blended Rail" as proposed would be highly vulnerable to accident, sabotage,
and train delays. It would be neither safe nor reliable, as postulated in 2008
Prop 1A.

North from Merced, plan HSR in these phases:

Phase 1: Merced to San Jose

Transfer at San Jose to Caltrain, Capitol Corridor, and planned
Silicon Valley BART.

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Upgrade UP/Amtrak East Bay Mulford route to BART overpass
in Oakland ("San Francisco Bay Rail Hub"?).

Phase 4: Oakland to Sacramento

Upgrade UP/Capitol Corridor route.

Phase 5: San Jose to San Francisco

Defer pending Caltrain total grade separation.

* BART trains about every 4 minutes to four downtown San Francisco
stations in 6-10 minutes.

Squander no more HSR funding on Caltrain or unsafe "Blended Rail". Delete
reference to "One-seat ride".

Robert S. Allen (925) 449-1387
223 Donner Avenue, Livermore, CA 94551-4240
BART Director, District 5 (1974-1988)
Retired, SP (now UP) Western Division, Engineering/Operations

**Draft Business Plan Comment
Type :**

2014 Business Plan RECORD DETAIL

Record Date : 4/7/2014
Submission Date : 4/7/2014
Affiliation Type : Individual
Interest As : Individual
Submission Method : Project Email
First Name : Robert
Last Name : Allen
Business/Organization :
City :
County :
Zip Code : 00000
Stakeholder Comments/Issues : *Corrected Copy*

High Speed Rail needs a secure route: fenced, with no grade crossings. "Blended Rail" as proposed would be highly vulnerable to accident, sabotage, and train delays. It would be neither safe nor reliable, as postulated in 2008 Prop 1A.

North from Merced, plan HSR in these phases:

Phase 1: *Merced to San Jose*

Transfer at San Jose to Caltrain, Capitol Corridor, and planned Silicon Valley BART.

Phase 2: *Merced to Sacramento*

Phase 3: *San Jose to Oakland*

Upgrade UP/Amtrak East Bay Mulford route to BART overpass in Oakland ("San Francisco Bay Rail Hub"?). BART about every four minutes runs to four downtown San Francisco stations in 6 to 10 minutes.

Phase 4: *Oakland to Sacramento*

Upgrade UP/Capitol Corridor route.

Phase 5: *San Jose to San Francisco*

Defer pending Caltrain total grade separation. Squander no more HSR funding on Caltrain or "Blended Rail". Delete references to "One-seat ride."

Robert S. Allen (925) 449-1387
223 Donner Avenue, Livermore, CA 94551-4240
BART Director, District 5 (1974-1988)
Retired, SP (now UP) Western Division, Engineering/Operations

**Draft Business Plan Comment
Type :**

2014 Business Plan RECORD DETAIL

Record Date : 4/7/2014
Submission Date : 4/7/2014
Affiliation Type : Individual
Interest As : Individual
Submission Method : Project Email
First Name : William
Last Name : Warren
Business/Organization :

City :

County :

Zip Code : 00000

Stakeholder Comments/Issues : To Comments Administration:

Sir,

This past Friday, April 4th, 2014 I sent to you, by Fed Ex, an 11 page document that contains my comments on the Draft 2014 Business Plan. I expect you will receive it tomorrow, Monday April 7, 2014.

It occurred to me that a PDF version of this document would allow you to skip the scanning process. So, attached is the same report, in PDF form, that you will receive in "hard copy" tomorrow.

Use either, they are the same.

Thank you.

William H. Warren

Palo Alto, CA 94306

Draft Business Plan Comment Type :

Attachments : W H Warren Comments 2014 Draft Business Plan.pdf (366 kb)
Grindley.letter-report.BP.pdf (1 mb)
Inappropriate Use Of Cap and Trade.pdf (1 mb)

April 4, 2014

Attn: Comments Administration
Draft 2014 Business Plan
California High-Speed Rail Authority
770 L Street, Suite 800
Sacramento, CA 95814

Dear Sir,

I am submitting the attached comments which address shortcomings and deficiencies in your February 7 2014 version of the Draft 2014 Business Plan.

Please review and incorporate the appropriate corrections and additions in the Business Plan and its supporting documentation and reports.

My attached comments are with regards to the following 3 documents that support the Draft Business Plan:

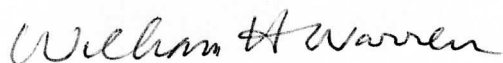
Part I – 2014 Ridership and Revenue, Technical Memorandum, produced by Cambridge Systematics


Part II – 2014 Operations and Maintenance Cost Model Documentation for Section 5: Operations and Maintenance

Part III – 2014 Service Planning Methodology, Section 4 - Ridership and Revenue Forecasts, and Section 5 - Operations and Maintenance

Thank you for your attention to this matter.

Yours truly,



William H. Warren

Palo Alto, CA 94306

Part I - 2014 Business Plan Ridership and Revenue, Technical Memorandum,
DRAFT 2014 BUSINESS PLAN - Section 4: Ridership and Revenue Forecasts

There are three major problems with the assumptions that support the Model that drives the Ridership, and Revenue Forecasts.

First, the 2014 Business Plan baseline pricing of \$86 between the San Francisco Bay Area and the Los Angeles Basin sets the long distance at a price of 22 cents per passenger mile, between San Francisco (4th and King or Transbay) and Los Angeles Union Station. All other “shorter” ticket prices on a “per passenger mile basis” are higher in an attempt to maximize total revenues. Unfortunately, these resulting ticket prices are dramatically higher than current prices. It is not clear if these price increases were built into the survey information provided to “survey takers” for the surveys collected over the past few years.

Here are two examples. In the first example, the following table, “Table 3, ICS and IOS Point to Point Fare Comparisons” shows that the HSR fares listed in Table 5.2 of the 2012 Ridership and Revenue report (see the second column) are 38% higher than the subsidized Amtrak fares that these existing customers are used to. This Figure 3 is from a report¹ prepared before the 2014 Ridership and Revenue became available. Since the 2014 Ridership and Revenue report raises the base line prices from San Francisco to Los Angeles from \$83 to \$86, an increase of 3.6%, the situation is worse than this chart presents. The pricing of the Amtrak fares are current 2014 pricing, and the 2014 Ridership and Revenue report shows a price of \$43², not \$41³, for the Merced to Fresno segment, an increase of 4.8%; therefore the 64% that HSR fares exceed Amtrak fare shown in Figure 3 becomes 72%.

From the “Fleecing” Report – Figure 3 – ICS and IOS Point-to-Point Fare Comparisons							
	Point to Point miles	Avg. HSR fare	HSR Charge Per mile		Amtrak Flex Fare	Flex Fare per mile	% that HSR Fare is > Amtrak’s
Intra-ICS destinations							
Merced-Fresno	58	\$41	71¢		\$25	43¢	64%
Merced-Visalia	98	\$48	49¢		\$37	38¢	30%
Merced- Bakersfield	164	\$63	38¢		\$48	29¢	31%
Average			48¢			34¢	38%
IOS Destinations							
Merced-Palmdale	259	\$79	31¢		\$72	28¢	10%
Merced-San Fernando	300	\$80	27¢		\$70	23¢	14%
Average			28¢			25¢	12%

Needless to say, such a dramatic price increase is going to drive away many existing Amtrak customers. It not clear if this level of a price disparity was explained, when surveys were taken. These surveys, it appears, were subsequently used to project the

“win rate” in the model, regarding how many existing and new conventional rail customers would switch to HSR. Naturally the travel time is less, an hour on Amtrak is reduced to 25 minutes, to get from Merced to Fresno, but today’s price of \$25 goes up by \$18. It also appears that since the 2012 Plan says that Amtrak service is to be discontinued south of Merced⁴, once the IOS goes into operation (the 2014 Plan is silent on this point), then the current customers will not have a choice. Seems to me, many would respond to such a survey question by saying “I will drive, or I will take a bus”.

In the second example, it appears the same pricing issue is going to exist in the Bay to Basin and Phase One time period. As this Figure 4, from the same January Report⁵, shows that HSR pricing is substantially above the existing pricing of Metrolink and Caltrain services in Los Angeles and San Francisco “Bookends” areas. As the last column clearly shows the price increase for an existing customer would be over 100% (double the price) and by over 200% (triple the price). Granted the transit times will be less, but again it does not appear that the impact of these higher prices were part of the survey activity that is driving the model that is driving the ridership projections, which use these HSR prices. Again this work was done in January 2014, so it understates the degree of the price differential as it compared Metrolink and Caltrain 2014 pricing to the 2012 Business Plan pricing. With the increase in the prices in the 2014 Draft Business

From the “Fleecing” Report – Figure 4 – ‘Bookends’ Point-to-Point Fare Comparisons							
	Point to Point miles	HSR fare	HSR Charge Per mile		Metrolink or Caltrain Fare	Fare per mile	% that HSR Fare is > Amtrak’s
SoCal Destinations							
San Fernando- Anaheim	49	\$30	61¢		\$12	24¢	150%
San Fernando-LA Union Station	31	\$25	81¢		\$8.00	26¢	213%
LA Union Station- Norwalk	16	\$25	\$1.56		\$7.25	45¢	245%
Norwalk-Anaheim	12	\$25	\$2.08		\$7.00	58¢	257%
LA Union Station- Anaheim	25	\$28	\$1.12		\$9.00	36¢	211%
Avg. SoCal			\$1.00			33¢	208%
NorCal Destinations							
SF TBT-Millbrae	15	\$16	\$1.07		\$5	33¢	220%
Millbrae-Redwood City	13	\$16	\$1.23		\$3	23¢	433%
Redwood City-San Jose	24	\$17	71¢		\$5	21¢	240%
San Jose-Gilroy	33	\$17	52¢		\$7	21¢	143%
SF TBT-San Jose	49	\$21	43¢		\$11	22¢	91%
SF TBT-Gilroy	80	\$23	29¢		\$13	16¢	77%
Avg. NorCal			51¢			21¢	150%

Plan, these comparisons just become less financially attractive for the HSR project.

Second, the 2014 Business Plan does not appear to consider the true, total, trip time to be encountered by a passenger in the IOS period or the Bay to Basin period, compared to the alternatives of driving, taking a bus, or flying. A recent report⁶, March 2014, which I co-authored shows that there is no significant time savings by taking the HSR during the IOS period of operation. This is shown in the following chart. What is most striking is

number of logistical steps a traveler must go through during the IOS period if HSR is selected and the total trip time may in fact be longer than driving, and of, course, substantially longer than flying. If this level of travel mode usage, and switching modes to use the HSR in the IOS period, was included in the survey information that is driving the model that is driving the ridership projection, it is not mentioned, nor is it visible. Therefore, it is a safe assumption that “survey takers” did not know what a trip in the IOS period was going to entail.

From the “If You Build It” Report - Figure 4 Estimated One-Way Elapsed Travel Times of Travel Options During the IOS-Only Phase (2022 - 2026) (Calculations in minutes: totals converted to hours and minutes)									
Point-to-Point Increments	Transit Mode	Travel Times of CHSRA's Offerings ⁷			Travel Time By Auto		Travel Time Using An Airplane		
		Norwalk to Berkeley – Two Options –		Central LA to San Jose	Norwalk to Berkeley	Central LA to San Jose	Norwalk to Berkeley	Central LA to San Jose	Central LA to Market St. SF
		Via San Francisco	Via Oakland ⁸	Via Union Station	Owner - operated auto	Driver lives in Central or South LA ⁹	Via LGB to OAK to Berkeley ¹⁰	LAX to SJC then to San Jose center	LAX-SFO to Market Street SF ¹¹
Board + time to departure point ¹²		15	15	15			25	35	35
LGB/LAX Security & Boarding							45	45	45
Norwalk-LA Union Station	Metrolink ¹³	30	30						
Connection		5	5	5					
LA Union - San Fernando	CHSRA Bus ¹⁴	37	37	37					
Ticketing & Connection		15	15	15					
San Fernando-Merced	HSR ¹⁵	128	128	128					
Connection Only		5	5	5					
Merced-Oakland	CHSRA Bus		160 ¹⁶						
Merced-San Jose	CHSRA Bus	150 ¹⁷		150					
Flying Time LGB-OAK, LAX-SJC, LAX-SFO ¹⁸							59	50	56
Ticketing & Connection		15	15				25	15	15
San Jose To Millbrae	Caltrain	40							
Ticketing & Connection		15							
Millbrae-Berkeley	BART	62							
SFO to SF	BART								33
Oakland-Berkeley	BART ¹⁹		16				23		
SJC-San Jose	#10+VTA							35 ²⁰	
Minimum Total Travel Time		8hrs. 37min	7hrs. 6min	5hrs 55 min	6hrs. 13min ²¹	5hrs. 20min ²²	2hrs. 57min	3hrs. 0min	3hrs. 4min

The report also compared the total pricing and confirmed what was generally known, the HSR IOS options cost less than the price of flying, and are more than the cost of driving. For example, the person considering flying has to pay from \$20 to \$45 more than the price to use the HSR IOS trains and busses, and this increase in cost will save 3 to 5 hours of travel time. In comparison, the person considering driving, and traveling alone, can save from \$0 to \$40 by driving, can also save up to two hours in travel time, and that person will have the use of the car at the destination. It is not clear if the “survey takers” were given this level of pricing and travel time such that they could provide an informed opinion in the survey.

Most interesting is that in the Bay to Basin period of operations, HSR travel times are reduced, to the point if a person is traveling from city center to city center the total travel times are competitive with flying and faster than driving. But if the travel is not city center to city center, a couple of hours have been removed but the times are still no better than driving. This is shown in the following chart, taken from the same report.²³

From the “If You Build It” Report - Figure 6 Estimated One-Way Elapsed Travel Times of Travel Options During the Bay to Basin Phase (2022 - 2026) <small>(Calculations in minutes: totals converted to hours and minutes)</small>									
Point-to-Point Increments	Transit Mode	Travel Times of CHSRA's Offerings ²⁴			Travel Time By Auto		Travel Time Using An Airplane		
		Norwalk to Berkeley – Two Options –		Central LA to San Jose	Norwalk to Berkeley	Central LA to San Jose	Norwalk to Berkeley	Central LA to San Jose	Central LA to Market St. SF
		Via San Francisco	Via Oakland ²⁵	Via Union Station	Owner - operated auto	Driver lives in Central or South LA ²⁶	Via LGB to OAK to Berkeley ²⁷	LAX to SJC then to San Jose center	LAX-SFO to Market Street SF ²⁸
Board + time to departure point ²⁹		15	15	15			25	35	35
LGB/LAX Security & Boarding							45	45	45
Norwalk-LA Union Station	Metrolink ³⁰	30	30						
Connection		5	5	5					
LA Union - San Fernando	CHSRA Bus ³¹	37	37	37					
Ticketing & Connection		15	15	15					
San Fernando – San Jose	HSR	154		154					
San Fernando-Merced	HSR ³²		128						
Connection Only			5						
Merced-Oakland	CHSRA Bus		160 ³³						
Flying Time LGB-OAK, LAX-SJC, LAX-SFO³⁴							59	50	56
Ticketing & Connection		15	15				25	15	15
San Jose To Millbrae	Caltrain	40							
Ticketing & Connection		15							
Millbrae-Berkeley	BART	62							
SFO to SF	BART								33
Oakland-Berkeley	BART ³⁵		16				23		
SJC-San Jose	#10+VTA							35 ³⁶	
Minimum Total Travel Time		6hrs. 28min	7hrs. 6min	3hrs 46 min	6hrs. 13min³⁷	5hrs. 20min³⁸	2hrs. 57min	3hrs. 0min	3hrs. 4min

These are complicated trade offs that the consumer is going to need to understand to be able to make informed decisions at the time of travel. It is equally important that survey data which is supposed to represent these trades offs and consumer preferences fairly represent these options. Nothing in the Ridership Report documents such information was ever presented, and resulting informed decisions were then input into the ridership model.

Third, I believe the Ridership Model has a costing parameter such as “Auto Operating Cost = 20 cents per mile per person”. If so, I believe this is creating a tremendous bias toward pulling automobile users, incorrectly, over to the HSR. The statement above is in the “Notes” for Table 5.9, page 5-19, of the CHSRA 2012 Ridership Report, for “IOS Low, 2030”. The same statement for CHSRA 2012 Table 5.10, page 5-20, for “IOS High, 2030” was 28 cents.

For the 2014 Business Plan the Automobile Operating Costs are discussed on page 4-4 of the Ridership Report. The statement “The approach for forecasting auto operating costs for the 2014 Business Plan is consistent with the methodology used for the 2012 Business Plan, with updates to the cost projections.” The discussion then refers to an adjoining Table 4.4 which shows, for 2029, a range of 19 to 28 cents per mile. This is consistent with the Low - High range of 20 to 28 cents for 2030.

Therefore it appears that the methodology is the same in both the 2012 and the 2014 Business Plan, which assigns an auto operation cost of 20 to 28 cents per mile per person.

This inputs a significant bias into the model to pull customers from autos to HSR, because there is no recognized “economies of scale” as a family of 2, or 3, or 4 people ride in a car together. I know of no study that supports the argument that a car carrying 4 people has an operating cost of 80 cents per mile, if the baseline is 20 cents per mile for the first person.

This is a significant problem as there is reliable national data that shows that the average number of people per auto trip, if the trip is over 100 miles, is in the range of 1.88.³⁹

Impact Analysis of More Than One Passenger Per Auto Trip											1	
Number of Passengers Per Auto Trip	Distribution of			Average			Distribution of			2		
	Passengers Per Trip			Riders Per Auto			All Riders			3		
	<u>Best</u>	<u>Medium</u>	<u>Worst</u>	<u>Best</u>	<u>Medium</u>	<u>Worst</u>	<u>Best</u>	<u>Medium</u>	<u>Worst</u>	4		
										5		
1	65%	50%	35%	0.65	0.50	0.35	42%	27%	16%	6		
2	20%	24%	30%	0.40	0.48	0.60	26%	26%	28%	7		
3	10%	15%	20%	0.30	0.45	0.60	19%	24%	28%	8		
4	<u>5%</u>	<u>11%</u>	<u>15%</u>	<u>0.20</u>	<u>0.44</u>	<u>0.60</u>	<u>13%</u>	<u>24%</u>	<u>28%</u>	9		
	100%	100%	100%	1.55	1.87	2.15	100%	100%	100%	10		
										11		
A	B	C	D	E	F	G	H	I	J	K	L	M

I conclude there is the one passenger per auto market where the operating cost of 20 to 30 cents can be in the range of the long haul HSR pricing of 22 cents per mile. In this sub market HSR has a chance to win the customer. Once there is a second, third, and even a fourth person in the car, the auto operating costs, per person, drop to half, a third, or even a quarter of the 20 to 30 cents. Unless speed is critical to the people in a car, the multi-passenger per car sub-market will be extremely hard to penetrate. I have seen no survey data that shows this to be the case.

This then raises the questions of what is the size of the single passenger sub-market? The table above provides some guidance. I have created three cases, with the Medium case target, in column D, producing the known average of 1.88 passengers per auto trip, in column H. For that Medium case, column L tells us that 27% of all passengers (including drivers) are in cars with one passenger (the driver), and the balance, 73%, are in cars that have 2 or more passengers (including the driver). This leads me to believe that the true

market for HSR to capture automotive passengers is about 30% of the over all auto market place. I see nothing in the 2012 or the 2014 Ridership Report that recognizes this limitation to penetrate this overall market. If my conclusion is correct, it is possible that the forecast of riders coming from the automobile market is overstated by a factor of over 3 times.

Part II - Operations and Maintenance Cost Model Documentation for Section 5: **Operations and Maintenance**

Section 4.2.3 provides headcount projections. How do these projections compared with actual staffing in European and Japanese HSR operations on a per revenue train mile or per revenue seat mile basis?

Section 4.3 states “The Authority has committed to using 100% renewable energy so the price for energy is based on the cost of renewables.” What will be the additional costs if these “renewables” are not available?

Section 5.2.2 provides headcount projections. How do these projections compared with actual staffing in European and Japanese HSR operations on a per revenue train mile or per revenue seat mile basis?

Section 6.2 provides headcount projections. How do these projections compared with actual staffing in European and Japanese HSR operations on a per revenue train mile or per revenue seat mile basis?

Section 7.2.3 provides headcount projections. How do these projections compared with actual staffing in European and Japanese HSR operations on a per revenue train mile or per revenue seat mile basis?

Section 8.2.1.3 provides headcount projections. How do these projections compared with actual staffing in European and Japanese HSR operations on a per revenue train mile or per revenue seat mile basis?

Section 9.3 provides headcount projections. How do these projections compared with actual staffing in European and Japanese HSR operations on a per revenue train mile or per revenue seat mile basis?

Section 10.1 and 10.2 do not state what is the expected headcount projections nor do they compare to actual staffing in European and Japanese HSR operations on a per revenue train mile or per revenue seat mile basis?

10.4 states that Operator profit is not considered. The Business Plan states that starting with the Bay to Basin Phase that a private operator will be used. Operators do not work for Zero, so a cost must be included in the financial roll up. It appears that this cost has intentionally not been included, implying that there is really no plan to bring a private operator in to operate the Bay to Basin system.

10.5 states that taxes are not considered. The tax liability of the operator starting with the Bay to Basin Phase is part of the operator's profit equation. Either a gross profit (including the operator's tax liability) needs to be included in 10.4, or a net profit can be computed in 10.4 and the tax liability shown in 10.5.

15.0 Monte Carlo Method – Bottom up – To use this technique effectively it is necessary to have existing, validated and documented data that represent the range and the distribution within the range of a given cost element. Lacking existing data, which the Authority does not have, estimates must be made. Every effort must be made to validate these estimates. However, for example, it does not appear this has been the case with the cost of labor. In all of the sections of the report which I mentioned above, there is no data from US and International HSR operations to validate the staffing levels which have been projected in the Business Plan. Lacking any validation of the projected labor head counts, for example, leaves the staffing cost estimates, at best, a guess. Adding a distribution, or a range, to a guess only makes it a wide guess, as opposed to a pin-point guess.

15.0 Monte Carlo Method – Top Down – Reference class analysis is critical to attempt to validate the “Bottom Up” approach. However, it is not appropriate to presume that the results achieved by others should be projected directly upon the Authority. Take, for example, the decision to take the two LGV cost variances, at an average of 5% over their plan as a good guidance for the Authority to adjust their mid range cost projections. The report states “Most Likely parameter was taken as the Medium cost scenario + 5% based on the two most ‘on-point’ cases in the reference set—the LGV Rhone-Alps and LGV Nord, both high-speed rail systems.” It is probably more important to note that these two sections of the French HSR system went into operation in 1994 and 1993, over ten years after the French HSR system initially went into operation.

So, it appears that with at least 10 years of “in-house” operational cost data at their disposal, the French still put together an operations cost plan for these two new sections that would prove to be off from reality by 4% to 6%. Since the Authority only has “guesses” and “distributions of guesses”, not in-house or “outside validated” data, as I discussed above, it would be more appropriate to assign a much, much, higher percentage to be used to adjust the Medium cost scenario to the Most Likely cost parameter.

Part III - 2014 Service Planning Methodology, Section 4 - Ridership and Revenue Forecasts, and Section 5 - Operations and Maintenance

From Paragraph 1.0, it says: “The plan, which captures service and service costs at an intermediate level of project development, does not yet represent the type of detailed operating plan necessary to provide a commercially driven, investment grade Operating plan.” If this is true, how does the Authority plan to certify over the next two years that an Operating Subsidy will not be required?

From Paragraph 2.0, it says: “service plan is then used to calculate specific outputs such as the number of revenue and non-revenue train runs, train mileage and fleet size for the Operation and Maintenance (O&M) Cost Model. The finished service plan is also the basis for the calculation of feeder bus mileage that is another input for the cost model.” But there is no documentation in this report which shows the Train Revenue Mileage or Seat Revenue Miles, nor Bus Revenue Mileage or Bus Revenue Seat Mileage that is identified as supporting the High, Medium, and Low Financial Forecasts in the Business Plan. Appendix 1, at the end of this report, is not referenced and it is not clear which financial forecast it supports.

Paragraph 3.0, Figure shows 16 hours per day of operations, but Paragraph 4.3 states the Revenue Service Hours are 0600 to 2400, which is 18 hours. Which is correct?

Paragraph 4.3 states “Nominally 85% of the all passenger seats are occupied. This is a target seat occupancy typically assumed in the heavy passenger rail service planning in the United States”. Substantiate this service planning parameter with documentation that shows which “heavy passenger rail” systems in the US and overseas actually have an average Load Factors of 85%.

Endnotes

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- ¹ See page 8 of “Fleecing Local High Speed Train Riders While Big City Executives Ride Cheaper” January, 2014. Available at <https://www.sites.google.com/site/hsrcliffr/home/briefing-papers/01-2014-fleecing-local-high-speed-train-riders>
- ² See Table 3.1 on page 3-5 of the CHSRA 2014 Ridership and Revenue document.
- ³ See Table 5.2 on page 5-6 of the CHSRA 2012 Ridership and Revenue document.
- ⁴ See Table 5.16 on page 5-35 of the CHSRA 2012 Ridership and Revenue document.
- ⁵ See page 10 of “Fleecing Local High Speed Train Riders While Big City Executives Ride Cheaper” January, 2019. Available at <https://www.sites.google.com/site/hsrcliffr/home/briefing-papers/01-2014-fleecing-local-high-speed-train-riders>
- ⁶ See page 7 of “If You Build It They Will Not Come” March, 2014. Available at <https://www.sites.google.com/site/hsrcliffr/home/3-1-briefing-paper---2014-plan/1-03-2014-if-you-build-it-they-will-not-come>
- ⁷ Norwalk and Berkeley, both considered inner radius suburbs of their central city, are roughly equal distances (15 miles) from Los Angeles Union Station and the SF TransBay Center respectively. A 2004 study suggests the market catchment area of Amtrak to be a 25 miles radius. See: T.R. Leinbach, City Interactions: The Dynamics of Passenger and Freight Flows, in Hansen & Giuliano; *The Geography of Urban Transportation* (pp. 30-58). NY: Guilford Press.
- ⁸ This option assumes the passenger goes from Merced to Oakland by CHSRA bus service, then to Berkeley by BART
- ⁹ Assumes the driver lives in Downtown LA, Huntington Park or South Los Angeles, a 15-minute drive to pass near LA Union Station on or entering Hwy 5.
- ¹⁰ The airport nearest Norwalk is Long Beach (LGB) – 12 miles. See: <http://www.travelmath.com/nearest-airport/Norwalk,+CA>. Driving time is 20 minutes. Prime Time Shuttle is scheduled pick-up. See <https://primetimeshuttle.hudsonltd.net/res>
- ¹¹ The San Francisco TransBay Center (SFTBC) is supposed to substitute for the Caltrain Terminal at from 4th and King Street. While SFTBC is scheduled to be completed in the fall of 2017, five years before the IOS is completed, the IOS funding does not include a connection to the SFTBC. See: <http://transbaycenter.org/construction-updates/project-schedule>
- ¹² Driving time to the Norwalk/Santa Fe Springs Metrolink station is assumed to be 5 minutes, connection time another 5 minutes
- ¹³ Travel times for the 10 daily Metrolink trains (5am-5:33pm) between the Norwalk/Santa Fe Springs Station to LA Union Station vary between 27 and 37 minutes; the average being 30.2 minutes. See: http://www.metrolinktrains.com/schedules/line/name/Orange%20County/service_id/1152.html Amtrak does not stop at the Norwalk/Santa Fe Springs Station.
- ¹⁴ PDF page 25, Figure 3.1 of the 2014 Draft Plan, Cambridge Systematics’ Technical Memorandum, Ridership and Revenue Forecasting, shows that during the IOS-Only Phase, there will be a Dedicated Bus Connection between LA Union Station and San Fernando. Travel time is 37 minutes per page A-1 [PDF 68] of the 2014 Draft Plan, Cambridge Systematics’ Technical Memorandum, Ridership and Revenue Forecasting .
- ¹⁵ Assumes the average 2014 Plan’s Merced-San Fernando run times (123-132 minutes); See the HSR Patterns table on page A-1 [PDF 68] of the 2014 Draft Plan, Cambridge Systematics’ Technical Memorandum, Ridership and Revenue Forecasting.
- ¹⁶ This is by CHSRA dedicated bus. Travel time is 160 minutes per page A-1 [PDF 68] of the 2014 Draft Plan, Cambridge Systematics’ Technical Memorandum, Ridership and Revenue Forecasting.
- ¹⁷ This is by CHSRA dedicated bus. Travel time is 150 minutes per page A-1 [PDF 68] of the 2014 Draft Plan, Cambridge Systematics’ Technical Memorandum, Ridership and Revenue Forecasting.
- ¹⁸ Flying times: LGB-OAK, See: <http://www.travelmath.com/flying-time/from/Long+Beach,+CA/to/Oakland,+CA> For LAX-SJC, see: <http://www.travelmath.com/flying-time/from/LAX/to/SJC> For LAX-SFO, see: <http://www.travelmath.com/flying-time/from/LAX/to/SFO>
- ¹⁹ BART from Oakland Lake Merritt to Downtown Berkeley takes 16 minutes and Oakland Coliseum to Downtown Berkeley takes 23 minutes. See: <http://www.bart.gov/schedules/bylineresults?route=3&date=03/02/2014>
- ²⁰ Assume from the aircraft’s landing to the free Airport Shuttle bus takes 15 minutes. The No. 10 VTA Bus takes 10 minutes from SJC to the Santa Clara Transit Center. See: <http://www.vta.org/routes/rt10>. From there it connects with Caltrain to San Jose Diridon station, which takes 9-10 minutes. Counting connections, SJC to downtown takes approx. 35 minutes.

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- ²¹ For Norwalk to Berkeley driving times see: <http://www.travelmath.com/driving-time/from/Norwalk,+CA/to/Berkeley,+CA> .
- ²² For Central Los Angeles to San Jose city center is 5hrs. 20 minutes see: <http://www.travelmath.com/driving-time/from/Norwalk,+CA/to/San+Jose,+CA>
- ²³ See page 13 of “If You Build It They Will Not Come” March, 2014. Available at <https://www.sites.google.com/site/hsrcliff/home/3-1-briefing-paper---2014-plan/1-03-2014-if-you-build-it-they-will-not-come>
- ²⁴ Norwalk and Berkeley, both considered inner radius suburbs of their central city, are roughly equal distances (15 miles) from Los Angeles Union Station and the SF TransBay Center respectively. A 2004 study suggests the market catchment area of Amtrak to be a 25 miles radius. See: T.R. Leinbach, City Interactions: The Dynamics of Passenger and Freight Flows, in Hansen & Giuliano; *The Geography of Urban Transportation* (pp. 30-58). NY: Guilford Press.
- ²⁵ This option assumes the passenger goes from Merced to Oakland by CHSRA bus service, then to Berkeley by BART
- ²⁶ Assumes the driver lives in Downtown LA, Huntington Park or South Los Angeles, a 15-minute drive to pass near LA Union Station on or entering Hwy 5.
- ²⁷ The airport nearest Norwalk is Long Beach (LGB) – 12 miles. See: <http://www.travelmath.com/nearest-airport/Norwalk,+CA>. Driving time is 20 minutes. Prime Time Shuttle is scheduled pick-up. See <https://primetimeshuttle.hudsonltd.net/res>
- ²⁸ The San Francisco TransBay Center (SFTBC) is supposed to substitute for the Caltrain Terminal at from 4th and King Street. While SFTBC is scheduled to be completed in the fall of 2017, five years before the IOS is completed, the IOS funding does not include a connection to the SFTBC. See: <http://transbaycenter.org/construction-updates/project-schedule>
- ²⁹ Driving time to the Norwalk/Santa Fe Springs Metrolink station is assumed to be 5 minutes, connection time another 5 minutes
- ³⁰ Travel times for the 10 daily Metrolink trains (5am-5:33pm) between the Norwalk/Santa Fe Springs Station to LA Union Station vary between 27 and 37 minutes; the average being 30.2 minutes. See: http://www.metrolinktrains.com/schedules/line/name/Orange%20County/service_id/1152.html Amtrak does not stop at the Norwalk/Santa Fe Springs Station.
- ³¹ PDF page 25, Figure 3.1 of the 2014 Draft Plan, Cambridge Systematics’ Technical Memorandum, Ridership and Revenue Forecasting, shows that during the IOS-Only Phase, there will be a Dedicated Bus Connection between LA Union Station and San Fernando. Travel time is 37 minutes per page A-1 [PDF 68] of the 2014 Draft Plan, Cambridge Systematics’ Technical Memorandum, Ridership and Revenue Forecasting .
- ³² Assumes the average 2014 Plan’s Merced-San Fernando run times (123-132 minutes); See the HSR Patterns table on page A-1 [PDF 68] of the 2014 Draft Plan, Cambridge Systematics’ Technical Memorandum, Ridership and Revenue Forecasting.
- ³³ This is by CHSRA dedicated bus. Travel time is 160 minutes per page A-1 [PDF 68] of the 2014 Draft Plan, Cambridge Systematics’ Technical Memorandum, Ridership and Revenue Forecasting.
- ³⁴ Flying times: LGB-OAK, See: <http://www.travelmath.com/flying-time/from/Long+Beach,+CA/to/Oakland,+CA> For LAX-SJC, see: <http://www.travelmath.com/flying-time/from/LAX/to/SJC> For LAX-SFO, see: <http://www.travelmath.com/flying-time/from/LAX/to/SFO>
- ³⁵ BART from Oakland Lake Merritt to Downtown Berkeley takes 16 minutes and Oakland Coliseum to Downtown Berkeley takes 23 minutes. See: <http://www.bart.gov/schedules/bylineresults?route=3&date=03/02/2014>
- ³⁶ Assume from the aircraft’s landing to the free Airport Shuttle bus takes 15 minutes. The No. 10 VTA Bus takes 10 minutes from SJC to the Santa Clara Transit Center. See: <http://www.vta.org/routes/rt10>. From there it connects with Caltrain to San Jose Diridon station, which takes 9-10 minutes. Counting connection time, from SJC to downtown takes approximately 35 minutes.
- ³⁷ For Norwalk to Berkeley driving times see: <http://www.travelmath.com/driving-time/from/Norwalk,+CA/to/Berkeley,+CA> .
- ³⁸ For Central Los Angeles to San Jose city center is 5hrs. 20 minutes see: <http://www.travelmath.com/driving-time/from/Norwalk,+CA/to/San+Jose,+CA>
- ³⁹ See NHTS Tables of the US Department of Transportation, Federal Highway Administration. Available at <http://nhts.ornl.gov/det/Extraction3.aspx> Select Data Extraction Tool – Total Travel by Selected Trip Characteristics; Year = 2009, Income & Age & Gender & Worker & Purpose = Combine, Mode = POV (Privately Owned Vehicle), Miles = 100+

William Grindley

Atherton CA 94027

To: Draft 2014 Business Plan
California High-Speed Rail Authority
770 L Street, Suite 800
Sacramento, CA 95814

4 April 2014

Subject: Appropriateness of Using Cap and Trade Derived Funds to Finance Construction of the High-Speed Rail Project.

The Draft 2014 Business Plan speaks directly to the proposal to use funds from the Cap and Trade program (AB32) to help finance the high-speed rail project. The Draft document discusses the use of Cap and Trade funds as a source of funding both to help build the First Construction Section (the old ICS) and the Initial Operating Segment (IOS). These references appear in:

- The Executive Summary – pages 10, 12, 15, and 16.
- Section 6 of the Draft Plan, "Financial Analysis and Funding", on page 54, goes into the details of the current Budget Plan to provide \$250 Million in FY2014-2015, and a substantial portion of Cap and Trade revenues over the next 6 to 8 years.
- In the Appendix, a May 18, 2012 letter from the Peer Review Group, speaks to the 2012 Revised Business Plan, and discusses the need to consider Cap and Trade funds due to a lack of other sources of funding.

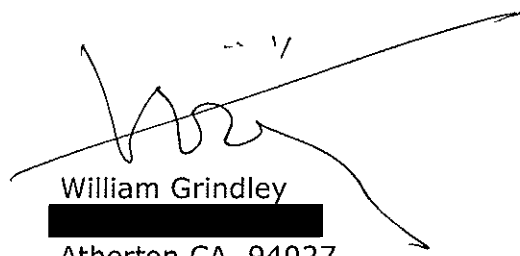
However, none of these references speak to the appropriateness of the use of the Cap and Trade revenues to provide construction funding of the FCS or the IOS, or for that matter any succeeding generation of construction. They view the Cap and Trade program as a source of State funding, nothing more. Missing from the Draft Plan is any argument as to why Cap and Trade funds should be used for High Speed Rail, other than there may not be another, near or long term source of funding.

The accompanying compendium of four crucial papers, called **Why Cap & Trade Funds Cannot Be Used To Finance High-Speed Rail (HSR) In California**, with its four detailed papers speaks directly to the issue of the appropriateness of the use of these funds. This is a very important perspective that needs to be included in the Plan, since one of the key audiences for the final 2014 Plan is the Legislature, which must deal with decisions around allocating Cap and Trade revenues.

The first of the papers is grounded in the science and economics of greenhouse gas (GHG), the first paper explores the quagmire of false promises and GHG savings the high-speed train system proposes. In the second, two attorneys document that AB32's auction proceeds must be used *"to facilitate the*

achievement of reductions of greenhouse gas emissions in [California]" a goal which the project does not accomplish. A third attorney shows how skewed and fallacious the California High-Speed Rail Authority's attempt to justify using only the first 29 miles of construction as the GHG benchmark, versus the entire 800-mile system. The final paper demonstrates that even if Cap & Trade were used to finance high-speed rail construction, it would fill a miniscule 1% (one percent) of the funding gap that currently exists. This point was reinforced by the Peer Review Group's Chairman's testimony a week ago in a CA Senate hearing that the proposed formula Cap & Trade legislation would still leave a \$15 Billion gap in construction funding for the IOS.

These papers are crucial to the debate on the appropriateness of the use of Cap and Trade funds and should be considered key in the amended and final version of the Authority's 2014 Business Plan.



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PLUS ÇA CHANGE, PLUS C'EST LA MÊME CHOSE

A Review and Comments On the California High-Speed Rail Authority's Draft 2014 Business Plan

Preface: As well as ignoring the strictures of AB3034 and the Peer Review Group's recommendations, the Draft 2014 Business Plan gives readers even less evidence of the project's viability than prior Plans. While claiming much has changed in ridership, revenues and operating expenses, the Plan is more of the same – *plus ça change, plus c'est la même chose*. These comments address only some of those shortcomings.

This paper is broken into four Sections, each focused at a failing of the Draft Plan. Each of the twenty-three arguments first summarizes the argument in a lead statement; then details why that conclusion was forthcoming. The comments are not in the sequence of the pages of the Draft 2014 Plan or the technical and supporting documents.

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SECTION I

THE 2014 DRAFT PLAN IGNORES AT LEAST SEVEN FUNDAMENTAL DEMANDS OF AB3034.

1. The 2014 Draft Plan admits the HSR program will need an illegal operating subsidy – The CHSRA's high-speed train system must be judged first and foremost like other business; it either succeeds financially without an operating subsidy or goes bankrupt.¹ That was the promise and that is the law (AB3034).

Before the Draft 2014 Plan was released, the State Auditor said that *"the Authority should clearly disclose that the 2012 draft business plan assumes that the State will only be receiving profits for the first two years of operation in 2022 and 2023, and potentially not again until 2060 in exchange for the almost \$11 billion the Authority assumes it will receive from the private sector over a four-year period."*² The Auditor noted this was a recommendation from two years ago that had not been "fully implemented."

The Draft 2014 Business Plan again broaches the subject of a \$50 Million operating subsidy during the ramp-up period.³ The requirements of AB3034, Section 2704.08 (c) (2) (J) and Section 2704.08 (d) (2) (D) are the train cannot have an operating subsidy. No mention is made in AB3034 of allowing an operating subsidy during the ramp-up period. This may have been an 'opening salvo' to prepare Legislators to think about the need for an operating subsidy.

By this hint of a need for an operating subsidy, the Authority is, in effect, 'opening the door' to violate a key premise of why Prop1A gained popular support in 2008. They are fully aware of the prohibition on an operating subsidy, and like many 'temporary' measures, this too has the potential to be not only permanent, but far exceed \$50 Million annually.

2. The Draft 2014 Plan admits that it will not meet AB304's intent to have the entire system completed by 2020. In 2008, the Legislature intended that *"the entire high-speed train system shall be constructed as quickly as possible in order to maximize ridership and the mobility of Californians, and that it be completed no later than 2020 . . ."*⁴ This ability to build quickly and maximize ridership were criteria for selecting the Central Valley as the Usable Segment.⁵

¹ AB3034 Section 9, Article 2 (5) says; "Revenues of the authority, generated by operations of the high-speed train system above and beyond operating and maintenance costs and financing obligations, including, but not limited to, support of revenue bonds, as determined by the authority, shall be used for construction, expansion, improvement, replacement, and rehabilitation of the high-speed train system .

² See: California State Auditor Report 2014-406 A, February 2014, Table 1, page 1

³ See: California High-Speed Rail Draft 2014 Business Plan, Exhibit 6.3, page 52 [PDF 52].

⁴ See Section 8 (f) of Section 185033 of the Public Utilities 2 Code (AB3034), which reads "(f) It is the intent of the Legislature that the entire high-speed train system shall be constructed as quickly as possible in order to maximize ridership and the mobility of Californians, and that it be completed no later than 2020, and that all phases shall be built in a manner that yields maximum benefit consistent with available revenues."

⁵ See CRITERIA FOR SELECTING THE SECTION/USABLE SEGMENT IN WHICH TO INITIATE CONSTRUCTION OF

Yet, not only will the “. . . the entire high-speed train system . . .” not be constructed by 2020 or 2021, the Authority admits that not even the 300 mile usable segment (aka Initial Operating Segment) will be ready in 2020 when the Draft 2014 Plan says, “*The initial operating segment (IOS) is planned to begin service in 2022 . . .*” However badly written AB3034 was, that delay is another clear violation of the law.

3. The 2014 Draft Plan ‘fudges’ on 2008’s promised operating speeds while experience shows that actual average operating speeds are about half of even the ‘fudged’ speed – Prop1A said the proposed high-speed rail (HSR) system “*Establishes a clean, efficient 220 MPH transportation system.*” and “. . . the need to test and certify trains operating at speeds of 220 miles per hour . . .”(Emphasis added) ⁶ The 2014 Plan now ‘fudges’ operating speed downward from 220mph to operate, “. . . at speeds capable of exceeding 200 miles per hour.” ⁷ That’s more than a 10% drop, since the Plan’s statement doesn’t even promise to operate at 220 miles per hour. Another broken promise.

Figure 1 Analysis of IUR/UIC Station-To-Station Times And Average Speeds			
Origin and Destination of Nine HSR Routes	– Station-to-Station –		
	Distance (miles)	Travel Time	Average Speed
Paris-Brussels	194	1hr 22min	145mph
Paris-Lyon	269	1hr 56min	136mph
Madrid-Seville	295	2hrs 20min	74mph
Rome-Bologna	224	2. 5hrs	54mph
Tokyo-Osaka	322	2.5hrs	129mph
Paris-London	271	2.5hrs	108mph
Stockholm-Gotenburg	284	3hrs	95mph
Paris-Amsterdam	338	4hrs	85mph
Rome-Milan	350	4hrs 10 min	85mph
Average station to station speed			101mph

However, as Figure 1 shows, even a 200mph average is still unrealistic given that data from decades of operations in Europe and Japan confirm that above about 186mph, power costs surge, maintenance costs increase, deceleration times increase and time advantages of going faster diminish.

The International Union of Railways/UIC Director of HSR presented data on travel times and consequently average speeds to the US Congress in 2007.⁸ Figure 2 analyzes the realities of station-to-station times and average speeds on high-speed rail routes from that presentation. What jumps out is that, on

THE CALIFORNIA HIGH-SPEED TRAIN PROJECT. Found at:

http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCsQFjAA&url=http%3A%2F%2Fwww.hsr.ca.gov%2Fdocs%2Fbrdmeetings%2F2010%2FNovember%2Fbrdmtg110410_agenda3AB.pdf&ei=Kk48U9WHMdaosASp8YHAAw&usq=AFQjCNHam0b1Ezg94BBT657sCvtAdoeZQQ&sig2=Mmf_VQfo-9f24aRkUd_7dA&bvm=bv.63934634,d.cWc

⁶ See Official Voter Information Guide, page 4, and AB3034, Section 2704.08 (K)(f)(2).

⁷ See: California High-Speed Rail Draft 2014 Business Plan, page 3 [PDF 3]

⁸ Ifñaki Barron de Angoit, Director of High Speed Rail at the International Union of Railways/UIC, presented this chart to the US Congress On April 19th 2007. See: International High-Speed Rail Systems: a Hearing before the Subcommittee on Railroads, Pipelines and Hazardous Materials of the Committee on Transportation and Infrastructure, House of Representatives; April 19, 2007, at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_house_hearings&docid=f:34799.pdf.

average, existing high-speed routes average a little over 100mph between destinations.

This presentation and analysis is important for two reasons. First, it shows that operating speeds in the 2014 Plan are below the CHSRA's promise to voters in 2008 and the strictures of AB3034. Second, a simple deduction from this first finding is that travel times are much longer – perhaps twice as much as the 2 hour and 40 minute 2008 promise between the downtowns of San Francisco and Los Angeles. The Authority continues to apply the Procrustean Bed concept to its travel time forecasts.

4. The 2014 Draft Plan fails to identify the sources of supplemental funds to complete construction of the Initial Construction Section (ICS) [aka First Construction Section (FCS)] – AB3034 required all funds needed to build a section or corridor must be available before proceeding with construction. The Initial Construction Sector (ICS) not only disappeared from the Draft 2014 Plan, although it has been part of both prior plans and is integral to the Cooperative Agreement with the DOT/FRA, the costs have increased beyond the \$6 Billion the Authority has 'in hand' or commitments for.⁹ Only the IOS is discussed in the Draft 2014 Plan. [Strangely, the map on PDF 14 clearly has construction of the IOS as far north as Merced, but the first construction starts in Madera, 33 miles to the south.¹⁰]

An ICS/FCS is mentioned in an employment claim on PDF 59 of the 2014 Draft Business Plan, and a First Construction Section is in its glossary on PDF 74 of the Plan, but no definition is given of that portion or its relationship to the IOS or the prior ICS.¹¹ Only on PDF 22 what was the Merced to Bakersfield section (aka ICS or FCS) is referred to: *"Building this first section will involve multiple construction packages with work to be completed in 2018. "*

Based on the Authority's own data, the July 2013 Briefing Paper, Diminishing Prospects For The CHSRA's Initial Construction Section, points out that ICS costs exceed the sum of the State and Federal funds available to build between Merced and Bakersfield.¹² The costs of acquisitions and construction for Amtrak-Ready

⁹ See: the November 2011 CHSRA Draft Business Plan. Page ES-7 [PDF 13] describes the ICS as 130 miles between Fresno and Bakersfield and; "Provides track and structures to support system spine." PDF 81 of the Cooperative Agreement between the DOT/FRA and the Authority says; "Pending completion of environmental review, CHSRA would start construction of an initial Central Valley Section from Madera County to Bakersfield (Kern County), California (hereinafter the "Project")." PDF 81-82 of that Agreement says; "The Project spans two EIRs/EISs . . . (1) Merced to Fresno and (2) Fresno to Bakersfield for initial Central Valley construction."

¹⁰ In the April 2012 Business Plan [PDF 15], the Authority purports to start in Merced; "The IOS of the California high-speed rail system will connect Merced to the San Fernando Valley gateway to Los Angeles." Later in that Plan [PDF 55] it says "The IOS is achieved through expansion of the first construction segment into an electrified operating high-speed rail line from Merced to Palmdale and the San Fernando Valley." and on that same page says, "Currently, the IOS is defined as extending from Merced to the San Fernando Valley . ." More such citations are found on PDF 62, PDF 64 (where HSR supposedly connects to the ACE), and PDF 88. This 33 mile shorter route saves the Authority over \$2 Billion. However, in Exhibit 2.2 [PDF 34] of the 2014 Draft Plan, even the IOS' definition became vague; "Cost to construct IOS Central Valley [no specific starting point] to San Fernando Valley [not San Fernando]" Madera is only mentioned in the 2014 Draft Plan in a breakdown of the benefits of SB1029 and there was no mention of Madera in the April 2012 Business Plan.

¹¹ The first construction segment is mentioned on page 8-2 [PDF 170] of the April 2012 Business Plan, " . . . the Merced-to-Fresno section of the first construction segment of the IOS"

¹² Available at www.sites.google.com/site/hsrcliff

track for the Madera-to-Bakersfield Initial Construction Section (ICS) were shown to be nearly \$7 Billion (\$6.97)¹³ – about a Billion more than the Authority had in-hand or prospects for receiving. Yet the Authority still claimed they had enough to build 130 miles between Madera and Bakersfield.

The Diminishing Prospects Paper showed Authority had a shortfall of at least \$600 Million – even when ignoring their risky assumptions about soils conditions south of Fresno, and allocating no contingency funds in their latest Agreement with the DOT/FRA. After spending about \$7 Billion to duplicate parallel tracks, the ICS could well stop some 40 miles north of Bakersfield. Not a bright prospect for fulfilling 2008's promises to voters.

5. The Draft business plan illegally diverts Prop 1A funds for regional rail projects – Except for the \$950 million allotted to "connectivity projects" Prop1A makes no allowance for improving regional rail transit infrastructure. Yet the 2014 Plan emphasizes rail modernization monies in SB-1029, which allocated \$1.1 Billion from the Prop1A HSR funds in for rail modernization projects.¹⁴ This use of high-speed rail funds for regional rail funds is illegal.

The administration of these funds will be not be by the Authority, but by the regional agencies (eg \$600 million diverted to Caltrain for its own electrification project.) Clearly Caltrain electrification is not a connectivity project, but a regional "rail modernization" project. Another anomaly in the allocation of \$500 Million of SB1029 funds for Caltrain electrification is that Caltrain does not go beyond 4th and King to the San Francisco TransBay Center (TBC), yet Prop1A demands the high-speed rail project start at the TBC. And in southern California, none of the roughly \$500 Million of SB1029 funds will go to preparing the Metrolink routes to accept electrified high-speed trains.

Matching funds for Caltrain's electrification project, as defined in the Memorandum of Understanding (MOU) between Caltrain and the Authority, were for the most part to be secured from funds from the Federal Transit Administration (FTA). To date these FTA funds have not been secured. FTA funds are for regional rail and intra-city rail projects. The high-speed rail project is an inter-city Passenger rail project, administered by the Federal Railroad Administration.

6. The 2014 Draft Plan fails to identify the escalated costs to complete the Initial Operating Segment (IOS) – Despite AB3034 requiring that all funds to build a section or corridor be identified and available before

¹³ See Appendix B of Diminishing Prospects For the CHSRA's Initial Construction Section, Found at: <https://www.sites.google.com/site/hsrcaiffrr/home/briefing-papers/07-2013-diminishing-prospects-for-the-central-valley-project>

¹⁴ Page 4 of the Draft 2014 Plan says "Also in 2012, the Authority adopted its 2012 Business Plan that laid out a new framework for implementing the California high-speed rail system in concert with other state, regional and local rail investments, as part of a broader statewide rail modernization program. And page 18 says "*Prior to 2020, Proposition1A investments in urban transit systems and rail modernization projects like the Caltrain electrification project will result in tens of thousands of tons of reductions in GHG emissions.*" referring for example to the use of Prop1A monies for urban transit.

proceeding with construction, the Draft Plan's IOS cost estimates notably exclude the largest cost components. The paper, *Diminishing Prospects*, pointed out that the costs to acquire properties, move or rebuild infrastructure in Construction Package #1 (CP1) are about twice the capital costs of that 29-mile section.¹⁵ Exhibit 3.2 of the Draft 2014 Plan exhibits the same amnesia about the costs to acquire properties, move or rebuild existing infrastructure.

CHSRA's estimate that the ICS and IOS will now cost about \$27.8, a reduction of nearly \$4 Billion, is eye candy.¹⁶ Like it's counterpart construction estimate for the first 29 miles, it attempts to narrow the public's vision to only construction items and represent the estimate as a savings to the public. Like the 'undeclared' costs in the first construction section (CP1A, CP1B and CP1C) the costs to acquire property, move or rebuild highway, telecom, irrigation and electrical infrastructure in the IOS will be at least twice that in Exhibit 3.2, particularly since south of Fresno the Authority faces the slopes of the Tehachapi mountains, soil subsidence and oil fields.

Actually the Authority hints at a much higher cost IOS, "*Until final environmental approval of all preferred alignments, stations and maintenance facilities is received, a number of key decisions remain to be made by the Authority.*"¹⁷ Therefore, a realistic cost estimate of the IOS won't be known until later, perhaps much later. While it may seem outrageous today, it is not inconceivable that the IOS would, if built, cost \$50 Billion or more in today's dollars.

However, the point may be moot. First, as the ruling on Part One of Tos, Fukuda made obvious, the Authority may choose to call their construction what they please, but they still lack at least \$25 Billion to fund their defined IOS. Second, the Scope of work for Tutor-Perini to construct the trackbed for first 29 miles (CP1A, CP1B and CP1C) is very explicit about the "*Contractor's design and construction shall be completed such as to ensure the Project's ultimate readiness for high- speed rail passenger operations.*"¹⁸ In short, none of the award's \$985 Million is to be spent for components to be HSR-Ready. Third, the 2012 version of the DOT/CHSRA Cooperative Agreement says; "*HST systems elements are not included in this Project (e.g., electrification, communications systems, train control, rolling stock, and vehicle maintenance facilities); these elements will be added by CHSRA as additional funding permits and are required to complete an initial operating segment.*"¹⁹ Even if the Authority somehow gains access to State funds, they have a still would have only a fifth of the more

¹⁵ This led to an estimate of nearly \$7 Billion for only an Amtrak-Ready trackbed between Madera and Bakersfield. See: Figure 1 [PDF 6] and Appendix A, *Diminishing Prospects for the CHSRA's Initial Construction Section (ICS)*, July 2013. Found at www.sites.google.com/site/hsrcliff

¹⁶ See Exhibit 3.2, PDF 34, CHSRA, Draft 2014 Business Plan, February 7 2014

¹⁷ See PDF 34, CHSRA, Draft 2014 Business Plan, February 7 2014; found at http://www.hsr.ca.gov/About/Business_Plans/Draft_2014_Business_Plan.html

¹⁸ See: PDF 15 (Exhibit C) of the July 31 2013 California High-Speed Train (HST) Project document, HSR: Agreement 13-06, Book2, Part C, Subpart 1: Scope of Work, Revision 9, Execution Version. Found at: http://www.hsr.ca.gov/Programs/Construction/HSR11-16_Design_Build_Contract/

¹⁹ See: page 82 [PDF 84] of Grant/Cooperative Agreement: Agreement Number FR-HSR-0009-10-10-15, electronically signed December 5th 2012. Found at: <http://www.hsr.ca.gov/serp.html?q=Grant%2FCooperative+Agreement%3A+Agreement+Number+FR-HSR-0009-10-10-15%2C+December+5th+2012&cx=001779225245372747843%3Ajsoc-pxls&cof=FORID%3A10&ie=UTF-8>

than \$31 Billion the IOS is likely to cost.

Four months after the July 2013 Briefing Paper, Diminishing Prospects For The CHSRA's Initial Construction Section was posted, the Authority admitted the Merced-to-Bakersfield HSR-Ready price had escalated – to \$13.2 Billion (in 2012 \$s).²⁰ By the time the Draft 2014 Business Plan was issued, the only-HSR-Ready cost was more than double the Authority's roughly \$6 Billion of funds in hand. Parsing this HSR-Ready cost for 163 miles to only be Madera-to-Bakersfield, and reducing the costs to remove the costs of trains and program level costs, lowers the Authority's \$13.2 Billion to \$9.2 Billion to build an HSR-Ready ICS. That conservative figure is still 50% more than the Authority has in-hand or prospects for receiving.

Back in 2010, the State Auditor said *"To ensure that it can respond adequately to funding levels that may vary from its business plan, the Authority should develop and publish alternative funding scenarios that reflect the possibility of reduced or delayed funding from the planned sources."*²¹ In their 2014 progress report, the Auditor said this recommendation had not been *"fully implemented"* – clearly an understatement.

7. The 2014 Draft Plan fails to identify any more funds – much less any available and committed sources of supplemental funding for the ICS/FCS – After admitting in November 2013 that the ICS/FCS is going to be at least 50% more expensive, a reasonable expectation would be for the Authority to admit the shortfall. While the Draft Plan says, *"While we continue to stay focused on building the first construction section [FCS] in the Central Valley"*, nowhere in the 2014 Draft Plan are the already-higher costs of building the ICS/FCS mentioned.²² If the Authority is focused on this section yet doesn't have the funds in hand to complete the ICS/FCS' 130 miles, there is little value in analyzing the costs of build the entire 300 miles of the Initial Operating Segment (IOS) until it solves the conundrum of where the funds come from to build the ICS/FCS. The Draft Plan will be just a fantasy without solving that conundrum.

8. The Draft 2014 Plan fails to mention how it intends to respond to the Superior Court's rulings of August and November 2013 – The Plan outlines that it has secured \$6 Billion, the Surface Transportation Board's (STB) approval, the dubious claims of having received solid marks from the Government Accountability Office (GAO), started construction on the first twenty-nine miles, and other accomplishments.²³

But all is not sweetness and light. The Plan did not mention STB's rejection of a

²⁰ Table Two shows the Merced-Fresno leg at \$5.482 Billion, and the Fresno to Bakersfield leg at \$7.711 Billion. See page 12 [PDF 16] of the CHSRA, Project Update Report to the California State Legislature, November 15, 2013. Found at:

http://www.hsr.ca.gov/docs/about/legislative_affairs/SB_1029_Project_Update_Rpt_11_2013.pdf

²¹ See: California State Auditor Report 2014-406 A, February 2014, Table 1, page 1

²² See Draft 2014 Business Plan, page 12 [PDF 12]

²³ See Draft 2014 Business Plan, pages 21-23 [PDF 21-23]

later CHSRA request, that the State Auditor did not give the Authority high marks on accomplishing milestones set out two years prior, nor that February 2014 is sixteen months after the long-awaited start of construction. It also failed to mention the Big Kahuna. Five months after the Superior Court agreed with the Plaintiffs in Tos, Fukuda and Kings County vs the California High-Speed Rail Authority et al, the Draft 2014 Plan makes no mention of the remedies that will bring either \$20 Billion more of capital to build the IOS, nor the required environmental certification of about 90% of the line, nor electrification or rolling stock.

While challenging the legal authority of the Superior court ruling may be one way to stall the legal process, it doesn't solve the inevitable financial failure of the project because of a lack of funds to build even the ICS/FCS, much less the IOS.

SECTION II

THE 2014 DRAFT PLAN IGNORES OR DISTORTS THE FINDINGS OF ITS PEER REVIEW GROUP AND THE GOVERNMENT ACCOUNTABILITY OFFICE (GAO)

9. The 2014 Draft Plan ignores the comments of the statutorily required Peer Review Group's (PRG) January 2012 report – More than two years before the 2014 Draft Plan was released, the PRG made comments the Authority seems to have ignored.

The Plan doesn't mention its own invention, the Initial Construction Section (aka First Construction Section), except in a table of costs of the Initial Operating Section [sic – should be Segment].²⁴ But the Peer's did, and were forthright in their comments about its lack of legality when they said, "*Further, the ICS as planned. . . does not appear to meet the requirements of the enabling State legislation. . . the ICS will not be electrified, and thus cannot serve as a high-speed test track for future VHSR rolling stock*"²⁵

The Peers also stressed "*. . . that the cost component of the project that may have the most inherent uncertainty – the ICS – has no low or high scenario, and is shown as a constant \$6 billion. Given that there has been no construction experience at all, and considering the fact that the route is not fully defined, this appears unreasonable in itself.*"²⁶ This also remains the case with the Draft 2014 Plan. It is clear the operating plan is to build south from Madera until the available money is gone (which may be \$6 Million, or \$3.3 Billion) to tie the track to the BNSF track, and declare victory.

The Peers spoke clearly when they said "*. . . the CHSRA has been very honest in making it clear that they do not have the additional \$25 to \$30 billion needed to complete either of the Initial Operating Segments, and there is no existing funding sources at any level of government that could credibly fill the gap.*"²⁷ Nothing has changed, no further federal funding has been found, no private sector funders have stepped forward, and yet the Authority keeps spending as if a financing miracle is to happen.

Although nearly two years old, the fact that the 2012 report said "*the Peer Review Group cannot at this time recommend that the Legislature approve the appropriation of bond proceeds for this project.*" and that "*absent a clearer picture of where future funding is going to come from . . .*" still holds true in the Draft 2014 Plan is an indictment of the Authority's ignorance or intentional avoidance of reality in this project.²⁸

²⁴ See Draft 2014 Plan, Exhibit 3.2, PDF 34

²⁵ See page 3 [PDF 3] of California High-Speed Peer Review Group report to the Legislature, January 3, 2012.

²⁶ Ibid PDF 6

²⁷ Ibid PDF 3

²⁸ Ibid. PDF 7

10. The Draft 2014 Plan tries, but fails, to convince readers that the GAO accepted their cost estimates – Exhibit 2.1 [PDF 31], the High-Speed Rail Organizational Model has an eerie resemblance to the model used in Europe to subdivide revenues and costs.

The Plan says, "*. . . the GAO found that the Authority's [Capital] cost estimates met all applicable guidance from the FRA and the USDOT.*"²⁹ In a quick read, that statement may seem like an endorsement of the Authority's cost estimates by GAO. It isn't. GAO may have found what was given them to have been recorded in the DOT format, but it does not sanction the Authority's cost estimates. How could GAO endorse that when on the next page the Authority admits that "*. . . a number of key decisions remain to be made by the Authority.*" concerning key capital cost components like "*. . . alignments, stations and maintenance facilities . . .*" That is not endorsement.

²⁹ See PDF 33, CHSRA, Draft 2014 Business Plan, February 7 2014

SECTION III

THE 2014 DRAFT PLAN IGNORES THE REALITIES OF CALIFORNIA'S TRANSPORTATION MARKETPLACE

11. The Draft 2014 Plan has the Authority proposing to launch a service into a highly competitive transportation market without either a travel time or cost advantage³⁰ – For five years (2022-2026) the Initial Operating Segment (IOS) IS high-speed rail (HSR) in California. The California High-Speed Rail Authority (CHSRA) offers nothing more. During this IOS-Only Phase, the fastest surface travel time between suburbs fifteen miles from LA Union and the SF TransBay terminal (6 hours 13 minutes) is by auto, which is nearly an hour faster than any offering by CHSRA. There is no travel time advantage for potential HSR riders to abandon the airlines or their automobiles to take combinations of rail and bus transport modes between the LA Basin and the SF Bay Area during the IOS-Only Phase.

Likewise, would-be HSR travelers during the two-year Bay to Basin Phase (2027-2028) will only benefit from a shorter-than-driving travel time between the downtowns of Los Angeles and San Jose. While more expensive, every itinerary using flights to 'defeat the friction of distance' have significantly lower travel times.

The entire HSR project's rationale: profitable, environment-friendly, more rapid and cheaper travel between San Francisco and Los Angeles' downtowns, becomes unhinged by starting high-speed rail's role in transporting Californians with the IOS-Only Phase as the only offering, and only adding a quicker ride to San Jose in the next, B2B, phase. Launching high-speed rail into the headwinds of market-tested airline operations and relatively very cheap auto travel – both being competitive forces the Authority cannot influence – without unassailable costs and/or travel time advantages is a receipt for rapid financial failure.

12. The Draft 2014 Plan's argument about attracting private capital once the IOS is built is extremely unconvincing because the public transportation marketplace requires subsidies; illegal under AB3034 –

The 2014 Draft Plan says the IOS will demonstrate "*Ridership and revenues sufficient to attract private capital for expansion.*"³¹ This will come because the project moves ". . . to complex long-term concession agreements with underlying private capital investment."³² In short, private investors are to raise at-risk funds to buy a concession that will produce enough revenue to both operate the IOS trains profitably and simultaneously invest as much as \$20 billion to

³⁰ All material in this comment on the 2014 Draft Plan is from the Briefing Paper, If You Build It, They Will Not Come, March 11th 2014. Found at www.sites.google.com/site/hsrcaiff/.

³¹ See: Draft 2014 Business Plan, Exhibit 1.1, page 16 [PDF 16]

³² Ibid. pg. 29 [[PDF 29]

build the Bay to Basin (B2B) infrastructure.³³ All of this is to be done without the State providing an operating subsidy as prohibited by AB3034.

Potential private investors will ask why, as shown in the Briefing Paper, If You Build It, They Will Not Come, should they invest if there are no time or cost advantages for the roughly ninety million auto travelers during the IOS-Only Phase to defect to the CHSRA's offerings.³⁴ They will also ask whether air travelers – many, if not most, of who are on business trips between the metropolises – would choose a round-trip between the two metropolitan centers of 10-17 hours versus six hours door-to-door, especially since their costs are likely reimbursed.

Private investors will see that, unlike the Golden Gate Bridge's use of revenue bonds, there has never been at-risk money put into the project – not since its inception. They will know that the Authority's own consultants told them in 2008 and 2009 that there would be no private money in the project unless there was an illegal subsidy – euphemistically called a 'revenue guarantee.'³⁵ But most importantly they will see evidence that challenges the Authority's ridership claims and ask themselves whether CHSRA's forecasts are realistic enough to risk their personal and clients' savings to pay billions of dollars for a concession.

No private capital has been forthcoming in the nearly two decades the project has been publically discussed. There's a good reason for that. Neither the IOS, nor the B2B phase offers many travelers the clear time or cost advantages that might produce enough revenue to attract private, at-risk capital to pay back its shareholders and invest in further extensions of HSR service. Nor is private, at-risk capital likely to be forthcoming

³³ Ibid. Exhibit 1.1, [PDF 16] says the IOS costs \$31 Billion to build and by time the B2B is completed, \$51 Billion will be spent; implying the B2B will cost \$20 Billion, much if not all to be privately funded.

³⁴ If You Build It, They Will Not Come, March 11th 2014, at www.sites.google.com/site/hsrcaiffr

³⁵ Five months before Prop 1A passed (June 2008) the Authority's consultants, IMG, reported that private, ". . . respondents argued that interest in equity investment would increase if the risk to the concessionaire were decreased, perhaps through some form of revenue guarantee . . ." [See: Report of Responses to the Request for Expressions of Interest For Private Participation in the Development of A High-Speed Train System in California by the Infrastructure Management Group (IMG) to the California High-Speed Rail Authority Board Financing Workshop, dated October 2008; page 2 of 17 The presentation was given in June but the printed report issued in October. "A presentation summarizing the results of the RFEI was made before the Authority Board of Directors on June 11, 2008 "] Eighteen months after the IMG's 2008 survey, in a September 2009 IMG-Goldman Sachs workshop, CHSRA learned: "Private appetite for ridership risk is limited without revenue guarantee or until ridership proven." [See: California High-Speed Rail Authority Board Financing Workshop; A presentation by Infrastructure Management Group Inc. and Goldman Sachs; September 3, 2009; pages 9-1]

SECTION IV

THE 2014 DRAFT PLAN MISLEADS, AND IN DOING SO, PRODUCES INDEFENSIBLE CONCLUSIONS

13. The 2014 Plan skews the data on driving costs to favor HSR travel

– Relative to worldwide costs, driving in California is cheap.³⁶ During the IOS-Only Phase an auto driver, can drive the 403 miles between Berkeley and Norwalk for under \$61 in gas (a total operating cost of under \$100) and can add family and friends to the family auto for almost no additional cost, something very useful to have in low density California.³⁷ Travelers could also take the Megabus between the city centers for \$23-\$34.³⁸

But the Authority attempts to paint a very different picture of the costs of traveling by auto. Their approach purposely ignores the discipline of marginal cost economics, artificially inflates the costs of driving and distorts reality in favor of taking the HSR train. For example, using the Authority's approach and their 2014 range of per mile operating costs; in 2022 a family of four's one-way driving costs for the 340 miles between Los Angeles and San Jose would range between \$300 and \$408 – and for the 380 miles between the centers of San Francisco and Los Angeles would range between \$334 and \$456.³⁹ Any driver

³⁶ Comparing an auto's operating costs to a rail trip during the IOS-Only Phase is relevant because HSR also has capital and maintenance costs. The main operating cost of an auto is gasoline. Compared with five nations with sizeable HSR systems, California's gasoline is cheap. Gas in the UK is 92% more expensive than the US, Japan's 74% higher, France's 62% higher, Germany's 49% and Spain's 20% higher. This comparison is important because it demonstrates the relative attractiveness of HSR to California's auto drivers versus HSR relative to drivers in the five other (HSR) markets. See: http://www.nationmaster.com/graph/ene_gas_pri-energy-gasoline-prices

³⁷ Based on gasoline costs, the website, [travelmath.com](http://www.travelmath.com), computes the costs of the 393 miles using gas mileage at 25mpg, gas prices at \$3.859, for a total price of \$60.66. See: <http://www.travelmath.com/cost-of-driving/from/Norwalk,+CA/to/Berkeley,+CA>. Table 4.4 in Cambridge Systematics Technical Memorandum on Ridership and Revenue Forecasting to the 2014 Plan [PDF 33] says the costs of a driver-only trip would be \$98.25—an average of 25¢/mile. What the Plan does not say is that the auto, SUV, van or truck could hold more than one passenger plus the driver, and that their costs are 'fully loaded' (incorporating insurance, maintenance, etc. costs). The 'gasoline only' cost to drive the 381 miles between central SF and central LA is \$58.87. See: <http://www.travelmath.com/cost-of-driving/from/San+Francisco,+CA/to/Los+Angeles,+CA>. The 'gasoline only' cost to drive the 341 miles between central LA and San Jose is \$52.69. See: <http://www.travelmath.com/cost-of-driving/from/San+Jose,+CA/to/Los+Angeles,+CA>. The Authority's 'fully loaded' cost for a driver-only auto trip would be \$85.25.

³⁸ The Stagecoach Group owns Megabus. Megabus.com lists two fares between the downtowns of San Francisco and Los Angeles. See: <http://us.megabus.com>.

³⁹ Why is the Authority's approach biased? The Draft 2014 Plan's Final Technical Memorandum – Ridership and Revenue Forecasting, page 4-4 [PDF 33] says, "The approach for forecasting auto operating costs for the 2014 Business Plan is consistent with the methodology used for the 2012 Business Plan, with updates to the cost projections." The range of auto operating costs per mile in the 2014 Draft Plan [Table 4.4 –PDF 33] is 22¢-30¢. However, in 2012 Business Plan's Final Technical Memorandum – Ridership and Revenue Forecasting; at the bottoms of Table 5.9 and Table 5.10 [PDF 55-56] are the notes. "Auto Operating Cost = 20 cents per mile per person (2011\$)." and "Auto Operating Cost = 28 cents per mile per person (2011\$)." The per-mile range of costs, 22¢- 30¢ are reasonable, and for a driver-only trip yield a 403-mile driving cost range of \$89-\$121. However, as opposed to applying the financial concept of marginal costs in the costs of driving formula, one is supposed to believe that the auto driver costs, and costs for each of three passengers should be defined to be equal. Therefore, an 403-mile auto trip between Norwalk and Berkeley with four occupants' one-way would have costs in 2022 range between \$355 (4 times \$89) and \$484 (4 times \$121). The consequence for the auto trip example is that the fixed costs must absorbed three more times – truly an ill-logical approach. The

knows these results are absurd, but the Authority uses that self-promoting conceit to justify using the HSR train during the IOS-Only Phase and thereafter. The Authority's approach in the 2014 Plan is highly biased against auto use since its formula adds each passenger's costs equal to that of the driver's costs.

14. The 2014 Draft Plan continues the tradition of tautology when setting high-speed rail fares – CHSRA long ago accepted that its fares can't compete in California on a cost basis with auto operating costs, so it plans to compete with airline fares: *"Fare levels are . . . somewhat below current airfares in the longer distance travel markets and well above the out-of-pocket cost of driving in the shorter distance travel markets."*⁴⁰

Therefore, in the Authority's past, present and future Business Plans, the costs of traveling by air between the two metropolitan areas will always be more expensive than using the HSR option because CHSRA set average airfares between the two cities as their benchmark and their HSR fares 17% cheaper. That approach is by definition tautological – 'heads I win, tails you lose.' This simplistic approach to HSR fares is an excellent marketing tool, but unrealistic. It also creates all sorts of distortions in the Authority's own pricing schemes whereby a third of all fares quoted by CHSRA must be held to no more than 83% of the average airline fares (\$86).⁴¹

In logic, a tautology (from the ancient Greek ταυτολογία) is a formula that is true in every conceivable use. That is, the premise always proves the conclusion. Making the cost of high-speed rail tickets between San Francisco and Los Angeles to be always 17% less than the average airline fares is a lesson in tautology. *Caveat Fidelis* (Believer Beware).

15. The Draft 2014 Plan's changed inflation rates are insignificant compared with their increased capital cost estimates – The Draft 2014 Plan says, *"Inflation for 2014 through 2016 is assumed to be 2 percent per year, and inflation for 2017 and beyond is assumed to be 3 percent per year."*⁴² This provides little comfort in the face of recent rises in the estimated costs of completing the first miles.

Appendix A of the July 2013 Diminishing Prospects estimated that an HSR-Ready system (without rolling stock) for the first 29 miles would cost \$3.15 Billion. When that figure, based on the Authority's early 2013 records, is extrapolated for 130 miles of HSR-Ready track between Madera and Bakersfield section, the capital cost would be about \$14.1 Billion.⁴³ Four months later the Authority's

apples-to-apples equivalent would be to have each additional high-speed rail passenger absorbing the entire fixed and variable costs as is the first traveler – i.e. the locomotive's driver.

⁴⁰ See: California High-Speed Rail Program Revised 2012 Business Plan, April 2012, page 5-11 [PDF 119]

⁴¹ See: California High-Speed Rail Draft 2014 Business Plan Ridership and Revenue Forecasting—Draft Technical Memorandum, Table 3.1, page 3-5 [PDF 28].

⁴² See PDF 36, CHSRA, Draft 2014 Business Plan

⁴³ Madera to Bakersfield's 130 miles is 4.48 times the 29-mile CP1.

own estimated the cost of HSR-Ready track was \$13.2 Billion for the Madera to Bakersfield section – a 7% difference in cost.⁴⁴

Importantly, capital cost estimates for the first 29 miles of construction (CP1A, CP1B and CP1C) have yet to be more than 60% reliable, and those south of Fresno are even less reliable. In the ICS, which will someday be part of the IOS, the Authority faces soil subsidence and alignment through an oil patch. It is probable that a HSR-Ready, Madera-to-Bakersfield ICS cost could easily exceed \$13 Billion, even without rolling stock. The good news is that rolling stock is not needed, as there is no market to serve inside the ICS/FCS.

Even if the Authority scales down its ambitions, the *Diminishing Prospects*' report estimate to build only Amtrak-Ready track was nearly \$7 Billion (\$6.97) – about a Billion more than the Authority had in-hand or prospects for receiving.⁴⁵ The Madera to Bakersfield price tag is now nearly a \$Billion more costly than the \$6.7 Billion reported two years ago as the high estimate.⁴⁶ And despite the Superior Court's decision, the Authority's 2014 Draft Plan claims they still have " . . . \$2.6 billion (Proposition 1A) and \$3.2 billion (federal) to build the first section from Madera to Bakersfield." ⁴⁷ Denial is the first stage of accepting death.⁴⁸

16. The 2014 Draft Plan once again only gives sketchy estimates on Operating & Maintenance costs – Roundly criticized by the in 2012 GAO Infrastructure Director for failing to provide more than *"half of the operating costs are captured in a single category called Train Operations and Maintenance. In addition, the Authority did not clearly describe certain assumptions underlying both cost estimates."* ⁴⁹

After that criticism, a reasonable assumption would be that by the time the GAO issued its final report on the project in March 2013, the Authority would have 'opened the kimono' to a fellow-government agency on its O&M costs, knowing that GAO would keep the O&M data confidential. Apparently that didn't happen, and the GAO had to say, *"The O&M model includes relevant data, but sources and variables can only be described as somewhat documented. For the most part, documentation relates how inputs are adjusted from past O&M models but fails to account for how earlier values were derived."* ⁵⁰ And this, *"No comprehensive document exists that explains the O&M model element by*

⁴⁴ See page 12 [PDF 16] of the CHSRA, Project Update Report to the California State Legislature, November 15, 2013. Found at:

http://www.hsr.ca.gov/docs/about/legislative_affairs/SB_1029_Project_Update_Rpt_11_2013.pdf

⁴⁵ See Appendix B of *Diminishing Prospects For the CHSRA's Initial Construction Section*, Found at: <https://www.sites.google.com/site/hsrcaiffr/home/briefing-papers/07-2013-diminishing-prospects-for-the-central-valley-project>

⁴⁶ See: Parsons Brinckerhoff, Cost Changes from 2009 Report to 2012 Business Plan Capital Cost Estimates April 2012. [PDF 27] says, *"The Estimated Capital Costs included in the DEIR/S for the Merced - Fresno Section ranges from \$3.8 to \$6.7 billion in 2011 Base Year dollars."*

⁴⁷ See the inset box on PDF 21 of CHSRA, Draft 2014 Business Plan, February 7 2014

⁴⁸ Dr. Kübler-Ross introduced denial as the first stage of her model in the 1969 book, *On Death and Dying*.

⁴⁹ Susan A. Fleming, Director of Physical Infrastructure Issues, Testimony Before the Committee on Transportation and Infrastructure, House of Representatives on High-Speed Passenger Rail, December 6th 2012.

⁵⁰ GAO-13-304, Report to Congressional Requesters, California High-Speed Passenger Rail, *Project Estimates Could Be Improved to Better Inform Future Decisions*, March 2013, page 74 [PDF 79]

element." And this "In addition, the O&M cost estimate is not based on an approved technical baseline document, although officials state that later versions will be aligned to the Concept of Operations plan." Finally, the GAO had to say "While the capital investment and O&M models include a contingency element, the factors used do not appear to be based on historical data or analogous sources."⁵¹ If not from "historical data or analogous sources." where did the O&M data in the Draft 2014 Plan come from?

O&M costs are one-half of the balance that proves or disproves a whether proposed project is profitable. The 2014 Draft Plan, and its technical memorandum go no further than the 2012 Plan did in describing O&M costs. Since November 2008, when Prop1A was approved, the Authority's mantra of "trust me" on O&M costs rings as hollow as it did five and a half years ago.

17. The Draft 2014 Plan lowers revenues, increases Operations and Maintenance (O&M) costs, yet somehow doesn't require an operating subsidy – The Plan says "The updated forecasts . . . also show lower farebox revenues than projected in the 2012 Business Plan" that O&M costs "show an approximately 14 percent increase from the cost estimates shown in the 2012 Business Plan" yet "The resulting updated projections continue to show that the system will not require an operating subsidy as defined in Proposition 1A and consistent with other systems around the world."⁵²

As with past CHSRA Business Plans, a *deus ex machina* guides the Authority's accounting. Without explanation, the operating finances defy basic economics unless the yet-to-be-revealed-and-proven financial results in the 2012 Plan showed such outstanding profits that income can be lowered and operating costs increased and the project remains profitable.

Readers of the Draft 2014 Plan will search for explanations of how all this magic happens, but will not find the details on:

- 1) how ridership increased, although there has been no further statewide survey of travelers since 2005; only useful-to-CHSRA interpretations of those surveys
- 2) how O&M costs increased (or decreased), because no government agencies or independent reviewers have had access to the data and 'secret' algorithms used to compute O&M.⁵³
- 3) how revenues and costs combine to create a high-speed rail system that ". . . will not require an operating subsidy"

Statements leading to ". . . will not require an operating subsidy" also defy the

⁵¹ Ibid. Page 76 [PDF 81]

⁵² See Draft 2014 Business Plan, pages 10-11 [PDF 10-11]

⁵³ Requests concerning access to public data on ridership, revenues, O&M costs and profits, and their computation, have been met with responses that say: "This is trade secret information pursuant to Evidence Code section 1060, incorporated into the California Public Records Act through Government Code section 6254(k) and, therefore, will not be provided." For example, see: email to Mr. Robert Prantis from Ms. Anne Parker of the Public Records Act Staff of the CA High-Speed Rail Authority, December 27th 2013.

Draft 2014 Plan's later begging for a \$50 Million operating subsidy.⁵⁴ Despite years of effort, Merlin cannot save the Authority from the rigors of Generally Agreed Accounting Principles (GAAP).

18. The Draft 2014 Plan makes false claims of the HSR system's environmental and congestion benefits –The Plan says *"The updated forecasts show higher ridership than projected in the 2012 Business Plan"* with lower farebox revenues, but *"... also a reduction in the average length of their trips compared to the data used for the 2012 Business Plan forecasts."*⁵⁵

A third of all fares (30 of the 98 estimated fares) published in the Draft 2014 Plan's technical memorandum are (by virtue of the promise to be 17% cheaper than airfares) held to no more than \$86. This is to serve the long haul riders (particularly those traveling the full distance between LA Union Station and the SF TransBay Center), and therefore the revenue differences must be made up somewhere else in the overall fare structure.⁵⁶

The answer to how revenues increase is given by the reference to *"... a reduction in the average length of their trips . . ."* Translated, that means the Authority, squeezed by the legal restrictions of computing long-range fares, had to dramatically increase both the number of trips through *"updated forecasts [that] show higher ridership"* and by charging more per passenger mile for short haul (intraregional) fares.

This is bunk and chicanery. The first bit of deception derives from the both 2009 and 2011 Plans' statements. The 2009 Plan said *"Local trips within the LA Basin and within the Bay Area are much shorter than between-region trips, and have a lower per-mile fare."* and in 2011, when referring to auto travel, the Authority said; *"High speed rail is much more efficient and economical for these shorter intercity trips, yielding substantial savings in cost . . ."* [Emphasis added]⁵⁷ Yet, analysis of the April 2012 CS memorandum shows the opposite is true. Local trips, such as those inside the Central Valley or inside the Bookends, have a considerably higher per mile charges than *"between-region trips"*.⁵⁸ The deception continues. In the Draft 2014 Plan, the same table of fares – but uplifted from \$83 to \$86 maximum – shows that the more local, shorter trips' fares costs multiples per mile of the Los Angeles to San Francisco fares.⁵⁹ That change – to charge short haul riders more per mile than metro center-to-metro center fares per mile – is a reversal of stated policy and promises.⁶⁰

⁵⁴ See: California High-Speed Rail Draft 2014 Business Plan, Exhibit 6.3, page 52 [PDF 52]

⁵⁵ See: California High-Speed Rail Draft 2014 Business Plan, PDF 10-11.

⁵⁶ See Cambridge Systematics for Parsons Brinckerhoff, draft technical memorandum, Ridership and Revenue Forecasting, California High-Speed Rail Draft 2014 Business Plan, Table 3.1, page 3-5, PDF 28, February 6th 2014.

⁵⁷ See: California High-Speed Rail Program, Draft 2012 Business Plan, November 1, 2011, page 1-5 [PDF 23]

⁵⁸ See: Cambridge Systematics' (CS) final technical memorandum of Ridership and Revenue Forecasting of April 12th 2012, Figure 5-2 [PDF pg. 38]

⁵⁹ See California High-Speed Rail Draft 2014 Business Plan Ridership and Revenue Forecasting—Draft Technical Memorandum, Table 3.1 – Assumed HSR Fares (in 2013 Dollars) page 3-5, PDF 28.

⁶⁰ This conclusion is also validated in the 'To Repeat' report's analysis showing that CHSRA's Medium Ridership Case produced revenues per passenger mile of 23¢ during the years of Blended Phase 1 operations, whereas the revenues per passenger mile will be 29¢ PPM during the early years of operations. These would be years

The second bit of deception is inherent in statements about the reduction of congestion and the improvement of air quality. In 2012, CHSRA said high-speed rail helped improve the environment.⁶¹ The Draft 2014 Plan says *"The high-speed rail system will help reduce congestion on the state's highways and at its airports, will help the state improve air quality and meet its greenhouse gas reduction goals, and put thousands of people back to work."*⁶²

But exactly the opposite will happen. Local riders will react to a doubling or tripling of their presently subsidized fares. Despite the termination of Amtrak San Joaquin Line's service in the Valley, riders still have cheaper local transport alternatives: subsidized buses, shared rides in autos or private vans. It should also be clear that 'Bookends' riders on Caltrain and Metrolink aren't going to see a two or eight-minute savings of travel time being worth spending 3-4 times the Caltrain or Metrolink subsidized ride. They will choose their travel mode with their pocketbooks.

Consequently Central Valley Amtrak riders will defect to a more affordable transport mode when CHSRA eliminates subsidies to their fares by eliminating the Amtrak service; namely autos and trucks. Caltrain or Metrolink riders will likely stay with their subsidized rides, as yet there is no discussion about eliminating those agencies operating subsidies. If anything, the train will not help congestion and will not bring improved air quality – it will contribute to air pollution in the Central Valley and, at best, not help solve air pollution at the Bookends.

19. The Draft 2014 Plan excludes Anaheim during the IOS, the Bay to Basin, and even during Phase 1's operations – To Anaheim or not to Anaheim: that is the question. AB3034 is riddled with references about Phase 1 going as far south as Anaheim.⁶³ Prop 1A says *"Of the total amount . . . to develop and construct a high-speed train system that connects San Francisco Transbay Terminal to Los Angeles Union Station and Anaheim . . ."* And a 2009, post election 'Fact Sheet' says *"In 2008, the cost of the Anaheim-to-San Francisco system was estimated at \$33.6 billion (in 2008 dollars)"* In the 2012 Draft Plan (November 2011) Anaheim is not only part of the Full Phase 1, it is also part of the proposed Phase 1 Blended system.⁶⁴ Anaheim was anchored into voters and high-speed rail planners thinking until early 2012.

In April 2012 the Authority had to scramble when someone asked something like: "What happened to Anaheim in the new Business Plan?" Perhaps it was left out because its absence brought down the Phase 1 capital costs. But at that

like 2025 when the IOS is first projected to be generating revenues; and the IOS has the higher pricing strategy seen in Figure 3.

⁶¹ See California High-Speed Rail Program; Revised 2012 Business Plan; April 2012, page 1-5 [PDF 33]. *"High-speed rail is much more efficient and economical for these shorter intercity trips, yielding substantial savings in cost, fuel, safety, and time, as well as environmental benefits"*

⁶² See California High-Speed Rail Draft 2014 Business Plan, PDF 17

⁶³ Article 2, Section 2704 of AB3034 not only says that going to Anaheim is the intent of the Legislature, but repeats the Anaheim terminus as being part of a May 2007 Phase 1 plan adopted by the Authority itself, and lists Anaheim as part of the Los Angeles to Irvine corridor.

⁶⁴ See Exhibit ES-1 page ES-7 [PDF 13] of California High-Speed Rail Program, Draft 2012 Business Plan, November 1, 2011.

month's Board meeting, it was put back in to the high-speed rail planning for Phase 1 after Board Member Mike Rossi proposed the Board reinstate it.⁶⁵ That supposedly solved "the case of the missing Anaheim."

Two years later, Anaheim is again the southern terminus of the system and shown as part of the Authority's fare structure.⁶⁶ But then it disappears again. The 2014 Draft Plan's Ridership and Revenue Forecasting technical memorandum clearly states that the Southern Terminus of high-speed rail is Los Angeles – with "Metrolink connections at Los Angeles Union Station."⁶⁷

Since 2007, Anaheim has been counted as a portion of Phase 1, and was reinstated in 2012. It is likely to cost another \$2-\$3 Billion dollars to build the more than 25 mile connection to HSR-Ready specifications. But now, on the subject of Anaheim in Phase 1, the Authority's own document contradicts itself.

20. The Draft 2014 Plan purposely misleads by claiming that high-speed rail systems are privately operated – Except in cases where the private investors' capital is not at risk, the Authority's claims of private sector participation in HSR projects are specious. The 2014 Draft Plan says, "*Many high-speed rail systems across the globe rely on the private sector to design, construct, operate, and maintain the system. In addition, many other high-speed rail systems also depend on a level of private-sector investment to fund the project.*"⁶⁸

Certainly the private sector contractors design, construct and often maintain HSR systems for profit. All HSR systems, with the possible exception of China, were designed and built by private companies – which makes California's proposed system an anomaly. Many HSR systems contract out infrastructure maintenance, and some lease rolling stock from specialized private leasing companies. But these reimbursed functions are not based on private, at-risk capital put into HSR.⁶⁹

But despite what European governments may name their high-speed rail operators, they all are government owned or subsidized like Eurostar. The Plan's statement is akin to saying Amtrak is a private rail operator. Technically it is, but it's stock is totally owned by the US Government and it has required an average of \$1 Billion a year subsidy.⁷⁰

⁶⁵ Vice Chairman Rossi said something like; "I would like to move that we adopt this business plan, including the amended language on Anaheim. And I'm looking for a second." See; http://www.hsr.ca.gov/docs/brdmeetings/2012/April/brdmtg041212_transcript.pdf

⁶⁶ See Cambridge Systematics, April 2012 Technical Memorandum, Figure 5.2 [PDF 38] and page 6 of the *Fleeing Local Riders* report. It also shows that fares are constrained by fiat to \$86 – not \$83 as in that report's 2012 predecessor

⁶⁷ See: Table 3.2, page 3-6 [PDF 29], the Ridership and Revenue Forecasting report, prepared by Cambridge Systematics, February 6, 2014. Table 3.1 also shows that local riders are going to get even more efficiently fleeced than shown in CS' April 2012 Technical Memorandum, Figure 5.2 [PDF 38]. For example, two years ago to go from the SF TransBay Terminal to Visalia via HSR cost \$72; now that ride is \$75. And from LA Union Station to Anaheim has gone up \$1 to \$29.

⁶⁸ See PDF 30, CHSRA, Draft 2014 Business Plan, February 7 2014

⁶⁹ The authors are grateful for the guidance by Lou Thompson, Chair of the Peer Review Group, in clarifying several matters concerning private participation in worldwide HSR systems in this and the following two paragraphs.

⁷⁰ Chairman Lou Thompson, in a 2011 Peer Group Report said on page 17 [PDF 21-22] "Amtrak (officially the

Technically the Taiwan HSR project is a private sector project, but their government had to take over construction when the developers went bankrupt, and still invests in the company to keep it in operation. Three of the seven Japanese HSR operating companies (East, West and Central) are private, though the government's general fund had to absorb enormous debt to continue building and operating the HSR system. The French HSR system had various private financing schemes for the fixed infrastructure, but these were really financing leases, and the government's SNCF takes the risks that demand will not cover operating costs. The UK's High-Speed train (HS1) and the Channel Tunnel are officially private, though both went through various "re-financings" that lost investors nearly everything.

There are no private HSR operators in France, Spain and Germany. The entire financial risk is the public's. Italy's private HSR train is faltering financially: the Netherlands's system is not financially stable and governments are being forced to choose what to do with such huge capital assets, abandon them or subsidize operations forever.

21. For at least the first five years of operations the 2014 Draft Plan ridership forecasts are indefensible – The 2014 Draft Plan says; *"The Medium outcome for the ridership forecast shows an overall ridership greater than 10 million trips in 2025 . . ."*⁷¹ In 2022, when the Initial Operating Segment-Only (IOS-Only) Phase begins and is supposedly profitable, ridership is forecasted to be about 4.6 Million.⁷²

Figure 2 (see next page) shows the growth rate in Central Valley Amtrak riders of 6.6% between 2012 and 2013.⁷³ Using that record growth rate indicates that in 2021, before the IOS-Only Phase begins, Central Valley ridership would be 2.03 million.

However, according to the Authority, the following year (2022), when the IOS operations begin, ridership will more than double to 4.6 million. That's more than a 100% increase – not credible.

National Railroad Passenger Corporation) was created in 1970 . . . operates all intercity rail passenger trains in the U.S." No private money is at risk to be lost when Amtrak's expenses exceed revenues. Thompson continues: "Overall, Amtrak requires in the range of US\$1 billion per year in financial support and has, since its creation in 1970, absorbed well more than US\$40 billion (2010\$) in support."

⁷¹ See: California High-Speed Rail Draft 2014 Business Plan, PDF 42

⁷² See: California High-Speed Rail Draft 2014 Business Plan Ridership and Revenue Forecasting—Draft Technical Memorandum, Figure 3.1 [PDF 25]. Estimates for 2022 and onwards are from Exhibit 4.2 [PDF 43] of the 2014 Draft Business Plan.

⁷³ Amtrak San Joaquin ridership 2012-2013 growth was 6.6%. The compound growth rate of 6.6% was used to forecast growth 2013-2021.

<p align="center">Figure 2 Forecasted Ridership During IOS-Only Phase And Years 1 and 2 Of B-to-B Operations</p>			
IOS- B2B Ops Year	Year	Central Valley Ridership 2013-2030	Sections Available for Passengers
	2013 actual ⁷⁴	1.2 million	Central Valley
	2017 est.	1.6 million	growth at 6.6% pa 2013-2021
	2021 est.	2.0 million	year before IOS begins
1	2022 est.	4.6 million	IOS-Only – CHSRA estimate
2	2023 est.	6.3 million	IOS-Only – CHSRA estimate
3	2024 est.	8.1 million	IOS-Only – CHSRA estimate
4	2025 est.	10.4 million ⁷⁵	IOS-Only – CHSRA estimate
5	2026 est.	12.3 million	IOS-Only – CHSRA estimate
6	2027 est.	14.6 million	B-to-B becomes operational
7	2028 est.	17.4 million	B-to-B
8	2029 est.	20.6 million ⁷⁶	Phase 1 becomes operational
9	2030 est.	24.4 million ⁷⁷	Phase 1

Figure 2 shows the Authority expects ridership to increase nearly three-fold during the five years of the IOS-Only Phase. That 28% per year growth would be most enviable, but it's also not credible. It's particularly not credible because, as shown in the report 'Fleeing' Local Riders While Big City Executives Ride Cheaper, the fares for taking high-speed rail during and after the IOS is built will be multiples of fares for the present, subsidized Amtrak San Joaquin line.⁷⁸ The is almost no chance that twice as many riders will travel on unsubsidized high-speed rail as traveled on subsidized Amtrak. Why should they?

22. The Draft 2014 Plan's ridership forecast is a static percent of the state's population forecasts – Not only does the Authority double ridership along the San Joaquin Amtrak corridor the year the IOS begins, then doubles ridership every three years (28% growth pa) while offering no travel time or cost advantage, but Cambridge Systematics' (CS) model forecasts follows a predictable path after the IOS. Specifically, CS' forecasts 73% of California's population will be riders every year into the future.

Surely there will be periods of economic change when ridership will decline, while in other periods ridership will grow. Surely, the introduction of new transportation and communications technologies will have an impact on ridership. Surely operations improvements or interruptions in one or more years will change ridership. But in the CS model, those things are not allowed to happen. Ridership stays a constant, dependent variable of population.

⁷⁴ For 2013 ridership on the San Joaquin line, see; Tim Sheehan, Fresno Bee, October 14, 2013 "Amtrak's San Joaquin trains set ridership record. Found at <http://www.fresnobee.com/2013/10/14/3553276/amtrak-san-joaquin-trains-set.html>

⁷⁵ Estimates for 2022-2024 are from Exhibit 4.2 [PDF 43] of the Draft 2014 Business Plan

⁷⁶ See: California High-Speed Rail Draft 2014 Business Plan Ridership and Revenue Forecasting—Draft Technical Memorandum, PDF 24 and PDF 25

⁷⁷ See Exhibit 4.1 [PDF 42] of the Draft Plan

⁷⁸ This Briefing Paper can be found at www.sites.google.com/site/hsrcliffr

23. The 2014 Draft Plan continues the 2012 Plan's fleecing of local riders – The Authority's Draft 2012 Business Plan (November 2011) said "*Local trips within the LA Basin and within the Bay Area are much shorter than between-region trips, and have a lower per-mile fare.*"⁷⁹ Five months later, the Authority flip-flopped on fare structure policy.

Analysis of the April 2012 Cambridge Systematics technical memorandum shows the opposite policy. It shows local trips, such as those inside the Central Valley or inside the Bookends, have a considerably higher per mile charges than "*between-region trips*".⁸⁰ A high-speed rail ride within the Central Valley will cost from 30% to 64% more than it would on Amtrak.⁸¹ A high-speed rail rider will pay two to three times more than Metrolink charges for an equivalent distance Southern California (SoCal) ride.⁸² For one of the shortest Northern California HSR rides – from the SF Transbay Terminal to Millbrae (15 miles) – the HSR rider would pay \$16, versus \$5 today on Caltrain.⁸³

It is a logical industry practice to charge more per mile for shorter rides than longer ones. Logical, because the time lost time for stops and the extra fuel consumption costs of multiple stops must be imputed into either a profit equation or the farebox revenue ratio in the case of public transport. But it is not honest to say one thing in a business plan and another in detail documents.

The 2014 Draft Business Plan the Authority claims no bias in its fare structure:

*"In developing these forecasts, the Authority's consultants **have not assumed any revenue optimization that would result from adjusting fares to optimize yields** on specific markets such as short distance and commuter trips either in the San Francisco Bay Area and/or in the Los Angeles Basin."*⁸⁴

On the same page the Authority says the fare structure is as in 2012:

*"The consultants have assumed the same high-speed rail fare structure as assumed in the 2012 Business Plan forecasts and presented in the Draft 2014 Business Plan Ridership and Revenue Technical Mem-orandum"*⁸⁵

But, in 2012 the Authority did exhibit bias and revenue optimization, and have

⁷⁹ See: California High-Speed Rail Program, Draft 2012 Business Plan, November 1, 2011, page 1-5 [PDF 23]

⁸⁰ See: California High-Speed Rail Authority: Report to the Legislature, December 2009, PDF pg. 72. In the 2008 Business Plan, page 18, Figure 20, [PDF pg. 21] that assertion comes out as "*Short trips entirely inside the Los Angeles/Anaheim area or the San Francisco Bay Area make up 30% of the trips, but only 8% of the revenue because of the shorter length and lower fare structure.*"

⁸¹ See Figure 3, page 8 of 'Fleecing' Local Riders While Big City Executives Ride Cheaper. This Briefing Paper can be found at www.sites.google.com/site/hsrcaiffr

⁸² These Average Fares are computed by taking the sum of the sample fares and dividing this sum by the sum of the sample miles, again derived from Google Maps' driving distances.

⁸³ Northern California Caltrain ride fares comes from their electronic files, found at <http://www.caltrain.com/Fares/farechart.html>

⁸⁴ See page 43 [PDF 43] Draft 2014 Business Plan

⁸⁵ Ibid.

continued that tradition in 2014. The paper, 'Fleeing' Local High-Speed Train Riders While Big City Executives Ride Cheaper' demonstrates that local riders will pay three-to-four times the per mile charge as riders in the artificially-constrained SF-to-LA market.⁸⁶ For example, from San Fernando to LA's Union station the HSR fare will be \$25; three times the \$8 Metrolink fare. On Metrolink the fare from LA's Union Station to Norwalk would be \$7.25; by HSR that ride would cost \$25: more than three times Metrolink's fare. On the SF Peninsula, from the SF TransBay Terminal to Millbrae (SFO), a HSR rider would pay \$16, versus \$5 today on Caltrain. That's \$1.07 per mile for a HSR ride versus 33¢ per mile for a Caltrain ride.⁸⁷

The same revenue optimization from local rides is true in the 2014 Ridership and Revenue Forecast. Table 3.1 page 3-5 [PDF 28] shows fares constrained to now-\$86 (no longer \$83).⁸⁸ Assuming that inflation in the intervening two years is about 3.6%, the 2012 and 2014 fares are about the same.⁸⁹ For example, two years ago to go from the SF TransBay Terminal to Visalia via HSR cost \$72: now that ride is \$75. And from LA Union Station to Anaheim has gone up \$1 to \$29.

Like the April 2012 Business Plan, the Authority's 2014 Draft Business Plan says one thing about the structure of per mile fares, yet their internal documents show another. In a court of law, that would be called deception.

⁸⁶ See: Cambridge Systematics, April 2012 Technical Memorandum

⁸⁷ Ibid. For the examples given see pages 8-9. Such analyses are based on Figure 5.2 [PDF 38] and are the data for these conclusions comes from page 6 of the Fleeing Local Riders report

⁸⁸ See: Ridership and Revenue Forecasting report, prepared by Cambridge Systematics, February 6, 2014, available at http://www.hsr.ca.gov/About/Business_Plans/Draft_2014_Business_Plan.html

⁸⁹ See: Cambridge Systematics, April 2012 Technical Memorandum, Figure 5.2 [PDF 38] and page 6 of the Fleeing Local Riders report

Why Cap & Trade Funds Cannot Be Used To Finance High-Speed Rail In California

Four Crucial Briefing Papers

April 2 2014

This paper regarding California's proposed high-speed rail project can be found at:
<https://sites.google.com/site/hsrcaliffr/home/3-1-briefing-paper---2014-plan/2-04-2014-analysis-of-cap-and-trade>

Additional reports on California's proposed high-speed rail project can be found at:
<https://www.sites.google.com/site/hsrcaliffr/>

Introduction & Overview To The Four Papers

Introduction: The Governor's FY 2014-15 budget requests \$250 million of Cap & Trade auction proceeds, and a third of all those proceeds thereafter to help finance the construction of California's high-speed rail (HSR) project.

As of early 2014, federal grants are close to being extinguished unless the State finds funds to match spent federal dollars. But with funds from the sale of Proposition 1A (Prop1A) funds denied the California High-Speed Rail Authority (CHSRA) because of court rulings, (now in the appeals process) it seems to many that funds from California's Cap & Trade auctions may be the sole funding source to continue the project.

The history of AB32, the legislative context of Cap & Trade funds, is rocky. After several court challenges, AB32 became law in 2006. Then-Speaker of the California Assembly, Fabian Nunez, authored AB32. During deliberations he stated the bill's intent.

*"AB32 authorizes the California ARB [Air Resources Board] to adopt a schedule of fees to pay for the direct costs of administering the reporting and emission reduction and compliance programs established pursuant to the bill's provisions. IT IS MY INTENT THAT ANY FUNDS PROVIDED BY HEALTH AND SAFETY CODE SECTION 38597 **ARE TO BE USED SOLELY FOR THE DIRECT COSTS INCURRED IN ADMINISTERING THIS DIVISION.**"* [Emphasis added]

The use of Cap & Trade funds to finance the construction of the HSR project has been highly controversial, not just with the 'environmental community' but also with the LAO in 2012 and 2014, as well as with scholars who question the environmentally-friendliness of high-speed rail. Using Cap & Trade funds to construct the high-speed rail project may also be illegal. It was seen to be controversial in 2012 when the Legislature resisted Governor Brown's first attempt to divert Cap & Trade to the HSR project, and it is controversial now.

Overview: Because the issue is far from settled, four authors submitted papers about using Cap & Trade funds to build the high-speed rail project. They are:

Paper 1 – The Reason Foundation's paper by Wendell Cox and Adrian Moore, **California High Speed Rail Project Greenhouse Gas (GHG) Emissions: A Dynamic Impact and Cost Analysis**, analyzes the State's mandate, and the science of and the unverified data on which High-Speed Rail Authority claims its proposed system's environmental benefits. They point out that AB32 includes a cap and trade program and requires greenhouse gas emissions (GHG) be reduced 80%, to be at 1990 levels, by 2050. In February 2014, the California Air Resources Board (CARB) reported

that to achieve the 2050 target requires acceleration of annual GHG emission reductions at more than double the rate necessary to achieve the interim 2020 targets. High-speed rail (HSR) construction will create substantial GHG. HSR, which is forecasted to begin operations in 2022, cannot reduce GHG emissions before AB32's 2020 horizon and the project's construction must purchase credits through the cap and trade program. Very high passenger load factors may reduce overall GHG emissions. Cost effective GHG reduction is paramount to maintaining economic growth and not passing on AB32's costs to the disadvantaged. Based on four scenarios for 2040 from the 2014 Draft Plan, using high-speed rail (HSR) to reduce GHG emissions would be far more expensive per ton than alternatives, and range from 90 to 1,400 times the cost of cheaper carbon offsets.

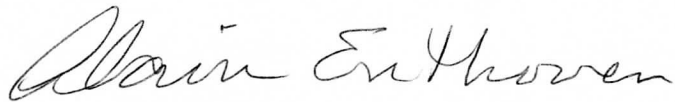
Paper 2 – Attorneys Birkey and Purvis' memorandum, the **Legality of Use of Cap-and-Trade Auction Proceeds to Fund High-Speed Rail**, outlines the goal of reducing GHG emissions statewide to 1990 levels, details the statutory requirements that Cap & Trade auction proceeds must be used to advance the goals of AB32, and that Health and Safety Code section 39712 plainly requires that AB32's auction proceeds must be used *"to facilitate the achievement of reductions of greenhouse gas emissions in [California] consistent with"* AB32. These esteemed attorneys then show why funding high-speed rail will not further the purposes of AB32. They finish with an analysis of why the use of Cap & Trade funds is a poor investment as a means to fund the high-speed rail project.

Paper 3 – Transportation Solutions Defense and Education Fund's President, David Schonbrunn, prepared an **Analysis of the CHSRA's GHG Report**, the California High-Speed Rail Authority's attempt to justify using the Cap & Trade funds. Schonbrunn argues that the entire approach is fallacious because it does not address here-and-now questions with facts, nor environmental impacts after construction of the first 29 miles. Rather the CHSRA report says, *"As the project moves forward, direct GHG emissions calculations will be carried out for each subsequent construction package."* He also points out there is no substantive or quantitative data on GHG emissions or their reductions, and no evidence to support CHSRA's contentions that by using renewable energy sources during construction, planting trees and supporting public transport the project will reduce GHG. These assertions are a *deus ex machina*, without foundation and inserted during the last minutes in the argument about using Cap & Trade funds.

Paper 4 – Mr. Mark Powell's paper, **The History and Status of The California High-Speed Rail Authority's Unlawful Funding Plan**, presents the context of funding the project using Cap & Trade monies. It details the evolution of high-speed rail funding approaches from the 1990s onwards. It shows how the CHSRA, ignoring directives to find ways of using sales or fuel taxes to fund the project's construction instead gambled that massive federal grants, coupled with Prop1A matching fund obligations,

would deflect criticism of the costs. That gamble failed. Federal funds have been limited to a single FY2010 grant and the nation's largest ARRA grants. The Department of Transportation (DOT) has not put new money into the California project for four fiscal years. The private sector has never put money in the project. Neither source is likely to in the future. Powell's paper closes by showing that the Governor's proposal would provide an infinitesimally small proportion of what is needed to continue constructing. Relying on Cap & Trade to fill the gap is foolish.

These papers represent a wide spectrum of practical and legal reasons that must be considered by decision makers during the debate over the use of Cap & Trade funds to partially finance California's proposed high-speed rail project. We thank the contributors for volunteering their time to prepare the papers and urge all readers to consider their arguments.

A handwritten signature in cursive script, reading "Alain Enthoven". The signature is fluid and elegant, with the first name "Alain" being more prominent than the last name "Enthoven".

Alain C. Enthoven
Marriner S. Eccles Professor of Public and Private Management (Emeritus),
Graduate School of Business,
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Paper 1

California High Speed Rail Project Greenhouse Gas (GHG) Emissions: A Dynamic Impact and Cost Analysis

Wendell Cox and Adrian Moore

The Reason Foundation

California High Speed Rail Project
Greenhouse Gas (GHG) Emissions: A Dynamic Impact and Cost Analysis

By Wendell Cox
Project Director: Dr. Adrian Moore

EXECUTIVE SUMMARY

California has established one of the most aggressive greenhouse gas (GHG) emissions reduction policies in the world. Under Assembly Bill 32 (AB32) and Governor Schwarzenegger's Executive Order number S-3-05, the state has adopted a cap and trade program to reduce GHG emissions and a requirement to reduce GHG emissions 80 percent between 1990 and 2050. The state proposes to build a high-speed rail line one objective of which is to reduce GHG emissions. This report evaluates the extent to which any GHG reduction from this proposed new rail line would arise and to put these into context, comparing the cost of such emission reductions with alternatives.

General Conclusion: It is generally concluded that high speed rail is an ineffective and expensive strategy for reducing GHG emissions. Under each of the scenarios examined in this report, high-speed rail would be many times more expensive per tonne of GHG emissions reduction than other alternatives, ranging from 75 times to 1,400 times the cost of carbon offsets. High-speed rail not only fails to advance the purposes of AB32, but it also retards the purposes of state law and policy by inefficiently consuming funding that could be used to obtain far greater GHG emission reductions.

1. Background

The California high speed rail line would operate from San Francisco to Los Angeles over both genuine high-speed rail and commuter rail right-of-way. The low option cost estimate is approximately \$68 billion (in year of expenditure dollars), although the state is far short of the funding needed to complete the line. The Brown administration has proposed using cap and trade funds to support construction of the line.

2. California Greenhouse Gas Emission Policy

California's GHG emissions reduction policies are based on objectives set in Assembly Bill 32 (AB32) and an executive order by Governor Schwarzenegger. AB32 sets an objective to reduce California's GHG emissions to 1990 levels by 2020. Ultimately, the policies require that GHG emissions in the state be reduced 80 percent from 1990 levels by 2050. A number of strategies have already been adopted, such as a cap and trade program and the "zero emission vehicle" (ZEV) program.

It will be challenging to meet the 2050 goal. The California Air Resources Board (CARB) indicates that a substantial acceleration of annual GHG reductions will be required between 2020 and 2050.

3. The CHSRA High Speed Rail GHG Emissions Reduction Forecast

Under certain circumstances, high-speed rail reduces GHG emissions by shifting people from other modes of transport, including cars and airliners. These modes of travel rely on fossil fuels, which produce substantially more in GHG emissions per unit of consumption (a mile traveled by a rail passenger, airline

passenger or vehicle driver) than the electricity generated to power high-speed rail trains, when those trains are at sufficient capacity. The construction of high-speed rail lines produces GHG emissions, which are usually offset over a period of time by the reductions from the transfer of highway and airliner passenger demand.

The California High Speed Rail Authority (CHSRA) has estimated that high-speed rail will reduce statewide GHG emissions by between 1.15 and 1.85 million metric tonnes annually by 2035. However, these estimates are likely high, due at least in part to the treatment of GHG emissions from electricity generation to power the trains and out-of-date assumptions with respect to light vehicle (automobile and light truck) fuel economy.

In addition, high-speed rail passenger projections have routinely been overly optimistic and the projections of CHSRA have been similarly criticized as being too high. Any over projection of ridership would also cause the GHG emissions reduction forecast to be high because there would be a smaller reduction in light vehicle and airliner use.

The Need for Dynamic Forecasting: Finally, and most importantly, California's policy environment could render any conventional GHG emission reduction forecast to be grossly over-optimistic. Conventional forecasting, such as performed by CHSRA, takes account of only already adopted measures and is thus "static." Yet the measures that have been formally adopted will be, according to CARB, insufficient to achieve the 2050 GHG emissions reduction objective. Indeed, assuming that California achieves its objectives, the high speed rail advantage over light vehicles in GHG emissions reductions will be virtually eliminated by 2040 (the horizon year used in this analysis). Static forecasts (such as the present CHSRA forecast) are virtually irrelevant, because CARB is obligated to adopt sufficient measures to meet the GHG emissions reduction objectives. There is a need for "dynamic" forecasting that includes the required GHG emissions reductions.

4. Alternative GHG Emissions Reduction Forecasts

This report develops alternative GHG emissions reduction forecasts, under two categories ("Dynamic Forecasts" and "Static Forecasts") for the horizon year of 2040.

Dynamic Forecasts: The Dynamic Forecasts assume that California will achieve its 2050 GHG emissions reduction objective and will be on a trajectory toward that achievement in 2040. The scenarios assume the adoption of specific strategies, already some already suggested by CARB that would achieve the target.

Static Forecasts: The Static Forecasts assume specific strategies that have already been adopted. Because these strategies are insufficient to produce the GHG emissions reductions required by California law and policy, each of the Static Forecasts would produce GHG emissions reductions that are likely to be far greater than will actually occur because light vehicle emissions are likely to be radically reduced by anticipated CARB policies (which is indicated in the Dynamic Forecasts).

Three scenarios are presented for each category, as indicated in Table ES-1.

Table ES-1 California High Speed Rail GHG Emission Reduction Scenarios	
DYNAMIC FORECASTS	
Assumptions	Adoption of additional specific strategies necessary to achieve California's 2050 GHG emission reduction objective.
Implication	That the state will achieve its 2050 GHG emissions objective and will be on a trajectory to achievement in 2040
SCENARIOS	A-1: CHSRA (Scenario [B-1] adjusted for California 2050 policies): Insufficient Information
	A-2: Adjusted CHSRA (Scenario [B-1] adjusted for California 2050 policies)
	A-3: International Experience (Scenario [B-1] adjusted for California 2050 policies)
STATIC FORECASTS	
Assumptions	Impacts of legally binding strategies that have been adopted by government agencies.
Implication	That the state will fall far short of achieving its 2050 GHG emissions reduction objective.
SCENARIOS	B-1: CHSRA (CHSRA midpoint ridership forecast with CHSRA GHG emissions reduction forecast)
	B-2: Adjusted CHSRA (CHSRA midpoint ridership forecast with independent GHG emissions reduction forecast)
	B-3: : International Experience (International ridership forecast & independent GHG emissions reduction forecast)

A model was developed to forecast the GHG emissions using the 2040 ridership projections in the *2014 Business Plan* and data from government sources.

GHG emission reductions from high speed rail range are forecast at from 0.12 million to 0.25 million tonnes annually in 2040 under the Dynamic Forecasts. This compares to the CHSRA static forecast reduction of 1.54 million tonnes. Under the other static forecasts, reductions of from 0.29 million to 0.59 million tonnes would occur (Table ES-2).

Table ES-2 Greenhouse Gas Emission Reductions from High Speed Rail: 2040			
Scenarios	CHSRA	Adjusted CHSRA	International Experience
Dynamic Forecasts	Insufficient Information	-0.25	-0.12
Static Forecasts	-1.54	-0.59	-0.29
In millions of metric tonnes			
Phase 1 Blended System			
Construction GHGs not considered due to lack of data.			
Sources: CHSRA and author's calculations			

5. Cost Effectiveness of High Speed Rail GHG Emissions Reductions

To minimize disruption of the economy and economic growth, major public policy program (such as California's GHG emissions reduction program) should be cost-effective, so that the standard of living is not retarded and poverty is not increased. The importance of cost effectiveness in reducing GHG emissions has been stressed by many, including CARB.

The principal metric is the cost per ton of GHG emissions reduction. Currently, the market price of carbon credits, which corresponds to a ton of GHG emission reduction, is approximately \$13 per ton (such as for tree planting programs or airline GHG offsets). Some strategies are far more cost effective than carbon offsets. Vehicle fuel economy improvement programs by the Environmental Protection Agency and CARB have indicated *negative costs of up to \$300 per tonne*.

The forecast cost per ton of GHG emissions reduction by high-speed rail range from \$7,100 to \$18,600 under the Dynamic Forecasts and \$1,000 to \$8,000 under the Static Forecasts (Table ES-3).

Table ES-3			
Cost per Metric Tonne of Greenhouse Gas Emission Reductions from High Speed Rail: 2040 (2013\$)			
Low Capital Cost Option	CHSRA	Adjusted CHSRA	International Experience
Dynamic Forecasts	Insufficient Information	\$ 7,100	\$ 15,700
Static Forecasts	\$ 1,000	\$ 3,000	\$ 6,800
2013\$			
High Capital Cost Option	CHSRA	Adjusted CHSRA	International Experience
Dynamic Forecasts	Insufficient Information	\$ 8,500	\$ 18,600
Static Forecasts	\$ 1,300	\$ 3,700	\$ 8,000
2013\$			
Construction GHGs not considered due to lack of data.			
Sources: CHSRA and author's calculations			

6. Prioritizing GHG Emissions Reduction Strategies

The Legislative Analyst's Office has stressed the importance of prioritizing high-speed rail relative to other alternatives for GHG emissions reductions as a prerequisite to the use of cap and trade funding.

Under each of the scenarios, high-speed rail would be many times more expensive per tonne of GHG emissions reduction than other alternatives, ranging from 75 times to 1,400 times the cost of carbon offsets. For example, \$250 million carbon offsets to abate GHG emissions are nearly equal to the required AB32 statewide reduction from all sources in 2020 compared to 2011. To state the issue in terms similar to CHSRA in its GHG emissions reduction report, \$250 million could purchase carbon credits equal to taking all of the light vehicles in the San Francisco and San Jose metropolitan areas off the road for a year (with GHG reductions that would be achieved before the 2020 AB32 deadline). High-speed rail not only fails to advance the purposes of AB32, but it also retards its purposes by inefficiently consuming funding that could be used to obtain far greater GHG emission reductions.

The longer run cost intensity is illustrated by applying the minimum high speed rail 2040 costs per tonne (CHSRA Scenario [B-1]) to the required state policy that 2050 GHG emissions be 80 percent of 1990 emission levels. If the average cost per tonne of GHG emission reduction in 2050 were equal to the projected cost per tonne of reductions via high speed rail, the total cost would be, approximately \$350 billion (in 2013\$), an amount equal to 1/7 the present size of California's gross domestic product (GDP). Under the more likely "Dynamic Forecast: International Ridership Scenario" (A-3) the cost could be up to \$6.2 trillion (in 2013\$). This is up to three times the size of California's GDP, larger than the GDP of Japan and larger than the GDPs of all countries in the world except for the United States and China in 2013.

Moreover, any GHG emissions reduction advantage of high speed rail would be fleeting. By 2040, much of the high speed rail advantage in GHG emissions relative to cars would have been eliminated by vehicle fuel economy improvements, under CARB plans. In the decade that follows, the gap would be further narrowed. By the 2060 long term horizon considered in the *2014 Business Plan*, any contribution by high speed rail toward lower GHG emissions may have been lost.

Further, diversion of cap and trade revenues for insufficiently cost effective GHG emissions reduction purposes could have political consequences. Support for the statewide GHG emissions reduction program could be diluted as it becomes clear that it is subject to political whim. Further, the failure to resolutely direct cap and trade revenues only to the most cost effective uses could further retard the state's business climate by indicating a lack of sufficient financial responsibility.

7. The Imperative for Cost-Effectiveness and Realism

High-speed rail would contribute only minimally to the reduction of GHG emissions, and its impact would be only temporary. These emissions reductions would require an exorbitant expenditure compared to other alternatives and would seem to betray a lack of seriousness with respect to GHG emissions reduction.

These expenditures would foreclose far more cost-effective approaches , unnecessarily restricting government options to maintain and improve public services. They would also reduce funding available for expanded business investment that could lead to greater economic growth, higher standard of living, and lower levels of poverty. In short, high-speed rail, both in terms of the present proposal to use cap and trade revenues and the longer term, retards the ability of the state to achieve its GHG emissions reduction objectives.

8. Legality of Cap and Trade Funding for High Speed Rail

Questions have also been raised about the legality of using cap and trade funding for high-speed rail, which has been proposed. These include a concern that high-speed rail does not serve the objectives of AB32, because it would not reduce GHG emissions before the 2020 AB32 deadline. Further, the Legislative Counsel has indicated concern that cap and trade revenues, as mitigation fees, may not be legally spent on high speed rail.

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1. BACKGROUND

California has established one of the most aggressive greenhouse gas (GHG) emissions reduction policies in the world.. Under Assembly Bill 32 (AB32) and Governor Schwarzenegger's Executive Order #S-3-05, the state has adopted a cap and trade program to reduce GHG emissions and a requirement to reduce GHG emissions 80 percent between 1990 and 2050. At the same time, the state proposes to build a high-speed rail line that would purportedly materially contribute GHG emissions reduction.

1.1 The California High Speed Rail Proposal

The California high speed rail Phase 1 Blended system is planned to operate over a genuinely high speed rail right of way for most of its route, while sharing track with commuter railways on the approaches to the northern and southern terminals (Los Angeles Union Station and San Francisco's Transbay Terminal).

Phase 1 Blended system operations would begin in 2029, offering "one-seat" service over the commuter rail and high speed rail right of way between San Francisco and Los Angeles. Travelers to and from Orange County (Anaheim) would have use Metrolink commuter trains to and from Union Station, where they would transfer between the two services.

Greenhouse Gas Emissions

One of the principal selling points of the California High Speed Rail project is its expected contribution to reducing greenhouse gas (GHG) emissions. The California High Speed Rail Authority CHSRA provided estimates of expected GHG emissions reductions in June 2013.¹ In its first year of operations, high-speed rail would reduce GHG emissions by the same amount as removing 31,000 cars from the road, which CHSRA indicated stretch for 100 miles on a single highway lane. By 2035, CHSRA indicated that an annual reduction of between 1.15 and 1.85 million metric tonnes² of GHG emissions would be achieved by operating high-speed rail.

Some travel by highway and airliners would be transferred to the high-speed rail system. Since the high-speed rail trains generally produce lower levels of GHG emissions per mile traveled than automobiles and airliners, it is expected that GHG emissions will be reduced. However, construction of the high-speed rail line will increase GHG emissions.

1.2 Costs and Funding

The *2012 Draft Revised Business Plan* projected the cost of the project at between \$68.4 billion and \$79.7 billion in "year of expenditure" dollars.³ The low cost option has been revised to \$67.6 billion in the *2014 Business Plan*.⁴ Over the past two years, most of the attention with respect to costs has been on the low-

¹ California High Speed Rail Authority (June 2013), *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels*.

http://www.hsr.ca.gov/docs/programs/green_practices/HSR_Reducing_CA_GHG_Emissions_2013.pdf.

² At 2,205 pounds, a metric tonne is 1.10 times the weight of a short ton (2,000 pounds), which is more commonly used in the United States. The spelling "tonne" is commonly applied to metric tonnes and is used throughout this report.

³ California High Speed Rail Authority (April 2012), *California High-Speed Rail Program Draft Revised 2012 Business Plan*, http://www.hsr.ca.gov/docs/about/business_plans/FINAL_Draft_2014_Business_Plan.pdf.

⁴ California High Speed Rail Authority (February 2014), *2014 Business Plan*, http://www.hsr.ca.gov/docs/about/business_plans/FINAL_Draft_2014_Business_Plan.pdf

cost option, yet the project itself has experienced substantial cost escalation already.⁵ Further, megaprojects tend to experience substantial cost escalation.⁶ Failure to consider the higher figure could be risky to the state and its taxpayers.

The low-cost option would cost \$54.9 billion in inflation adjusted dollars (2013\$). It is assumed that the high-cost option cost would remain proportional to its 17 percent higher relationship from the *2012 Business Plan*, at \$64.1 billion. For clarity, this report uses constant dollar costs, expressed in 2013 dollars. The high-speed rail system faces severe funding challenges and is far short of the financial commitments required to complete the Phase 1 Blended System.

The Brown Administration has proposed using \$250 million in Assembly Bill (AB32)⁷ cap and trade revenues from the 2014 – 2015 budget to support construction of the proposed California high speed rail project. In addition, the Administration has indicated that cap and trade funds should become an even larger share of high-speed rail funding in the future.⁸

There are considerable difficulties with this proposal. Perhaps the most important is whether AB32 cap and trade funds can be legally used for high-speed rail. It is generally agreed that high-speed rail cannot reduce GHG emissions before the 2020 horizon in AB32. Yet, the Brown Administration believes that GHG reduction from high-speed rail is so important as to justify the expenditure of cap and trade revenues. The legal issues are covered extensively by the Legislative Analyst's Office and a short summary is provided in Appendix A.

The focus of this report is a public policy evaluation of the effectiveness of high speed rail as a means for GHG emission reductions. The high priority the GHG emission reductions have received in both California legislation and policy requires that mitigation strategies be cost effective. Thus far, there has been no state or California High Speed Rail Authority GHG cost-effectiveness analysis. As the Legislative Analyst's Office has indicated, GHG emissions reduction strategies should be subjected to a consistent cost metric. This report provides an "out – of – pocket" estimate of the cost per ton of GHG emission reduction by high-speed rail. The calculations generally follow the McKinsey Corporation greenhouse gas emissions cost curve methodology.⁹ The principal time horizon is 2040, the end of the first decade with full service and the year for which detailed ridership data was provided by CHSRA in its *2014 Business Plan*.

This report principally relies on state documents, especially from CHSRA and the California Air Resources Board. Reports from outside the CHSRA (such as from CARB and the EPA) are taken at face value, with no attempt to evaluate their findings.

⁵ Joseph Vranich & Wendell Cox, "California High Speed Rail: An Updated Due Diligence Report," Reason Foundation (2013), http://reason.org/files/california_high_speed_rail_report.pdf

⁶ Bent Flyvbjerg, Nils Bruzelius and Werner Rothengatter, *Megaprojects and Risk: An Anatomy of Ambition*, (Cambridge, UK: Cambridge University Press, 2003)

⁷ The Global Warming Solutions Act.

⁸ Chris Megerian and Ralph Vartabedian (February 24, 2014), "Gov. Jerry Brown wants polluters' fees to help fund high-speed rail," <http://www.latimes.com/local/la-me-brown-rail-20140228,0,4977021.story#ixzz2ubyMC1e8>.

⁹ Calculated as the annual operating and capital cost, minus expected cost savings (especially from reduced energy consumption) divided by the metric tonnes of greenhouse gas emissions avoided. See: Per-Anders Enkvist, Tomas Nauclear and Jerker Rosander (2007, Number 1), "A cost curve for greenhouse gas reduction," *McKinsey Quarterly*, http://www.epa.gov/oar/caaac/coaltech/2007_05_mckinsey.pdfhttp://www.epa.gov/oar/caaac/coaltech/2007_05_mckinsey.pdf

2. CALIFORNIA GREENHOUSE GAS EMISSION REDUCTION POLICY

California has established aggressive goals for GHG emissions reductions, which require an 80% reduction in GHG emissions by 2050. Achievement of an 80% reduction in GHG emissions by 2050 will be challenging.

Trajectory to 2050: A recent CARB commissioned¹⁰ report reviewed three scenarios for 2050 and found that none achieved the 80 percent statewide GHG emissions reduction target. The scenarios included current policies, uncommitted GHG emissions reduction targets, and technological advances.

In its recently published *Proposed First Update to the Climate Change Scoping Plan: Building on the Framework (February 2014 Scoping Plan)*, the California Air Resources Board (CARB) noted that to achieve the 2050 80 percent reduction target would require acceleration of annual GHG emission reductions at more than double the rate that has been necessary to achieve the 2020 targets.¹¹ CARB has laid out a number of policy options for strengthening GHG emissions reductions to achieve both an interim target for 2030 and the 80 percent reduction target for 2050. Figure 1 in CARB's *Vision for Cleaner Air*¹² indicates the extent of GHG emissions reduction and trend by 2050 that it seeks to meet the California objectives. The dark section of the chart represents Gasoline, Diesel and Natural Gas. The lighter section of the chart represents Hydrogen, Electricity, and Jet Fuel.

¹⁰ Jeffery B. Greenblatt (20120, "Estimating Policy-Driven Greenhouse Gas Emissions Trajectories in California: The California Greenhouse Gas Inventory Spreadsheet (GHGIS) Model, Ernesto Orlando Lawrence Berkeley National Laboratory <http://eetd.lbl.gov/sites/all/files/lbnl-6451e.pdf>.

¹¹ California Air Resources Board (2014), *Proposed First Update to the Climate Change Scoping Plan: Building on the Framework (February 2014 Scoping Plan)*, http://www.arb.ca.gov/cc/scopingplan/2013_update/draft_proposed_first_update.pdf

¹² California Air Resources Board, *Vision for Cleaner Air*, <http://www.arb.ca.gov/planning/vision/vision.htm> and http://www.arb.ca.gov/planning/vision/docs/draft_scenario_assumptions_and_results_appendix.pdf and http://www.arb.ca.gov/planning/vision/docs/vision_for_clean_air_public_review_draft.pdf

CARB Scenario 2 Vision 2010 TO 2040

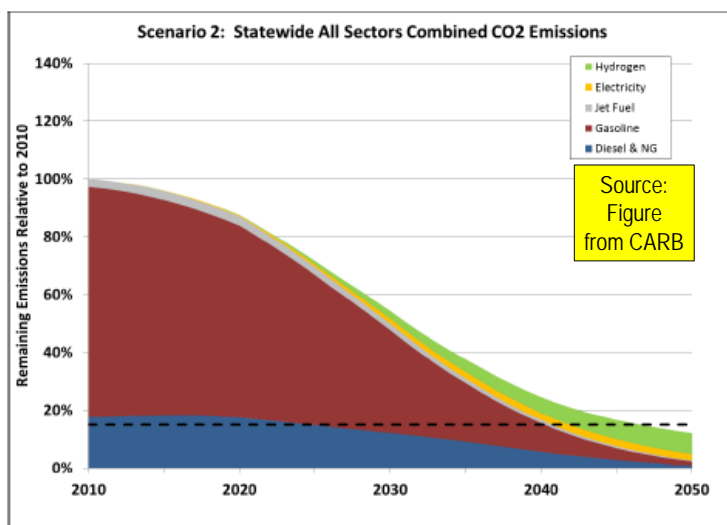


Figure 1

It will be challenging to meet these objectives. Any attempt to meet such targets should be prioritized by cost-effectiveness, which would coincidentally ensure that any negative impact on economic growth would be minimized. This would, consequently, limit any reduction in the standard of living and increase in the poverty rate.¹³

Regulations: Present and Future: Certain CARB and federal regulations are appropriate to an analysis of GHG emissions relating to high-speed rail. The principal source of reductions from high-speed rail would be the difference in GHG emissions per unit of passenger consumption ("passenger mile") between the train and alternative forms of travel, principally automobiles and airliners. Today, automobiles and airliners produce more GHG emissions per passenger mile than high-speed rail is expected to produce.

Regulations have been adopted to materially improve fuel economy for new light vehicles. By 2025, EPA regulations require the average new car to achieve 54.5 miles per gallon. Fuel economy improvements have a one to one relationship between motor fuel consumed and GHG emissions reductions --- each gallon of gasoline combusted produces the same volume of GHG emissions.

In addition, CARB has adopted a Low Carbon Fuel Standard (LCFS), which essentially requires a 10 percent reduction in GHG emissions from fuels (in addition to the improvement in fuel economy).

Perhaps the most significant CARB regulation authorizes the "zero emission vehicle" (ZEV). Beginning in 2017, two percent of light vehicles sold must be ZEVs. This rises to 16 percent in 2025. Substantial strengthening of the regulation is anticipated according to CARB:¹⁴

¹³ California has the highest poverty rate in the United States, adjusted for housing costs, according to the US Bureau of the Census.

¹⁴ California Air Resources Board (2014), *Proposed First Update to the Climate Change Scoping Plan: Building on the Framework (February 2014 Scoping Plan)*, http://www.arb.ca.gov/cc/scopingplan/2013_update/draft_proposed_first_update.pdf

Achieving our long-term climate goal and 2032 ozone standards will require a much deeper penetration of ZEVs into the fleet. As outlined in the 2009 ZEV Review and the 2012 Vision for Clean Air, and several independent studies (See Chapter III), the light-duty vehicle segment will need to become largely electrified by 2050 in order to meet California's emission reduction goals.

CARB documentation indicates that 87 percent of the light vehicle fleet in the state will be ZEV vehicles by 2050.¹⁵ Virtually 100 percent of vehicles in the state would be ZEVs at some point during the following decade (Figure 2). CARB also recommends increasing the LCFS to between 15 and 20 percent in the future.¹⁶

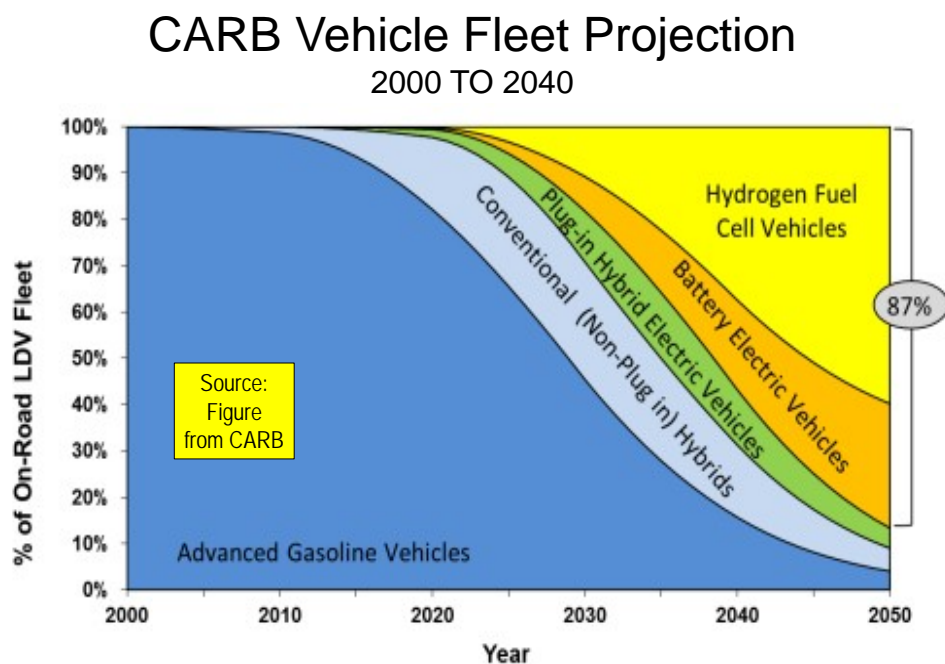


Figure 2

3. THE CHSRA HIGH SPEED RAIL GHG EMISSIONS REDUCTION FORECAST

Generally, the international transportation literature indicates that high-speed rail results in a reduction of GHG emissions compared to driving and from airline operations, if there is a sufficient diversion of demand. This is because GHG emissions from cars and airline operations are higher per passenger mile (miles traveled by a passenger) than from high speed rail, which can spread a train's emissions over a lot of passengers. High speed rail GHG emissions are produced by the generation of electricity to power the trains, supportive functions (station operations and construction).

¹⁵ California Air Resources Board, Public Hearing to Consider Advanced Clean Cars Program, <http://www.arb.ca.gov/board/books/2012/012612/12-1-2pres.pdf>.

¹⁶ California Air Resources Board (2014), *Proposed First Update to the Climate Change Scoping Plan: Building on the Framework (February 2014 Scoping Plan)*, http://www.arb.ca.gov/cc/scopingplan/2013_update/draft_proposed_first_update.pdf

In addition to the GHG that occur from attracting riders from cars and planes, high-speed rail itself produces GHG emissions during construction. It is generally assumed that the GHG emissions produced during construction will be recovered by greater GHG emissions reductions that occur from operating the high-speed rail system.

3.1 GHG Emissions from Construction

Construction activity GHG emissions estimates have varied significantly. One independent report indicated that it could take up to 70 years to offset the construction related GHG emissions with the anticipated GHG emissions reductions from operating trains.¹⁷ The California high-Speed Rail Authority has estimated that construction GHG emissions would be offset by GHG reductions from operations 2.8 years over the Fresno to Bakersfield segment.¹⁸

The Legislative Analyst's Office expects that a longer period will be required to recover the construction activity GHG emissions increases.¹⁹

...an independent study found that—if the high-speed rail system met its ridership targets and renewable electricity commitments—construction and operation of the system would emit more GHG emissions than it would reduce for approximately the first 30 years.

CHSRA intends to offset the GHG emissions additions by purchasing carbon credits through a tree planting program. Because of insufficient CHSRA documentation, construction GHG emissions are not evaluated further in this report.

3.2 GHG Emissions from Operations

CHSRA has indicated high speed rail operations will reduce GHG emissions from 1.15 to 1.85 million tonnes per year by 2035,²⁰ after the Phase 1 Blended System has been in operation for six years. By 2050, the reduction would be between 1.24 and 1.99 million tonnes per year. This report uses the year 2040 for its analysis of GHG emissions impacts. The year 2040 is used for analysis because corresponding ridership data was provided in the *2014 Business Plan*.²¹ Based on the 2035 and 2050 CHSRA forecasts, the corresponding GHG emissions reduction range for 2040 would be approximately 1.18 million to 1.90 million tonnes per year.

3.3 Analysis of the CHSRA GHG Emissions Reduction Projections

CHSRA provides only a summary description of the method used in its projection of GHG emissions reductions from operations. This makes a detailed analysis of the CHSRA GHG emissions reduction

¹⁷ Mikhail Chester and Arpad Horvath (2010), *Life-Cycle Environmental Assessment of California High Speed Rail*, Access.

¹⁸ California High Speed Rail Authority, *Draft Environmental Impact Report/Statement: Fresno to Bakersfield*, Table 3.3-17, http://www.hsr.ca.gov/docs/programs/fresno-baker-eir/draft_EIR_FresBaker_Vol1_3_3.pdf

¹⁹ Legislative Analyst's Office, *The 2012-13 Budget: Funding Requests for High-Speed Rail*, <http://www.lao.ca.gov/analysis/2012/transportation/high-speed-rail-041712.aspx>

²⁰ Previously, CHSRA had projected that the Phase 1 Blended System would reduce GHG emissions 4.8 million tonnes (Table 3.3-13, CHSRA, *Draft Environmental Impact Report/Statement: Fresno to Bakersfield*, http://www.hsr.ca.gov/docs/programs/fresno-baker-eir/draft_EIR_FresBaker_Vol1_3_3.pdf).

²¹ The ridership projections in the *2014 Business Plan* is provided between major regions (such as the San Francisco Bay Area, Southern California, and the San Joaquin Valley), although not specifically between stations.

projection impossible. Even with the limited information, there are indications of concerns that could have resulted in the GHG emissions reduction projections being high.

GHG Emissions from Electricity Production: The GHG emissions reduction forecasts may be overly optimistic from treatment of GHG emissions production from electricity generation. CHSRA indicated plans to purchase only electricity that is produced with renewable resources. Renewable resources generally produce lower levels of GHG emissions than fossil fuels.²²

*... the assumption for power emissions is that the Authority has purchased a renewable power mix of 20 percent solar, 40 percent wind, 35 percent geothermal, and 5 percent biogas converted to electricity.*²³

Yet the use of renewable resources would not reduce the GHG emissions of high speed rail to any greater extent than it does any other business or household in the pool of California electricity consumers. Renewable energy is scarce. To the extent that CHSRA uses renewable electricity, it is likely to preclude such use by others. This suggests that when CHSRA buys renewable electricity the total available electricity supply remains the same, but the renewable portion is allocated differently between users. Any credit taken by CHSRA for renewable power use that exceeds the generation mix in the state, could effectively crowd out consumption by other consumers. GHG emissions from electricity used in the state are reduced only when total emissions are reduced, not when they are reallocated between consumers.

Light Vehicle Emissions: The CHSRA GHG emissions reduction forecast may also be overly optimistic. CHSRA used the CARB EMFAC2011 model to project GHG emissions reductions from light vehicles. The EMFAC2011 model does not include the effect of the new more stringent 2016 to 2025 fuel economy standards adopted by the Obama Administration, which are reflected in the latest US Department of Energy projections.²⁴ This would result in an overstatement of GHG emissions reductions.

However, without a more detailed description of their methodology and data used, CHSRA's GHG emissions reduction forecast cannot be analyzed in detail.

California GHG Emissions Reduction Policy: Further, the CHSRA GHG emissions reduction projections were based on conventional assumptions that include only adopted public policy measures. Under normal circumstances, this would be sufficient. However, the public policy situation in California is unprecedented, with substantial additional policy adoptions virtually assured. As a result, a conventional "static" forecasting approach is likely to produce far higher reductions in GHG emissions than are likely in California's policy environment. A more dynamic forecasting method is thus required, as is described below.

California is strongly committed to reaching an 80 percent reduction in GHG emissions by 2050. It is clear that the California Air Resources Board intends to implement such measures as are necessary to achieve this objective.

The potential progress is indicated in Figure 3, showing projected trends in high speed rail and light vehicle emissions to 2040. Virtually all of high speed rail's advantage relative to ZEV vehicles could be

²² National Renewable Energy Laboratory (January 2013), *Life Cycle Greenhouse Gas Emissions from Electricity Generation*, <http://www.nrel.gov/docs/fy13osti/57187.pdf>.

²³ California High Speed Rail Authority (June 2013), *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels*.

²⁴ US Department of Transportation, Energy Information Administration, *Annual Energy Outlook 2014*.

eliminated at the likely unachievable 85 percent load factor²⁵ forecast by CHSRA. At the lower ridership level indicated in international research, light vehicles could *eliminate* the GHG emissions advantage of high-speed rail per highway mile.²⁶

GHG Emissions: HSR & Light Duty Vehicles

2010 TO 2040

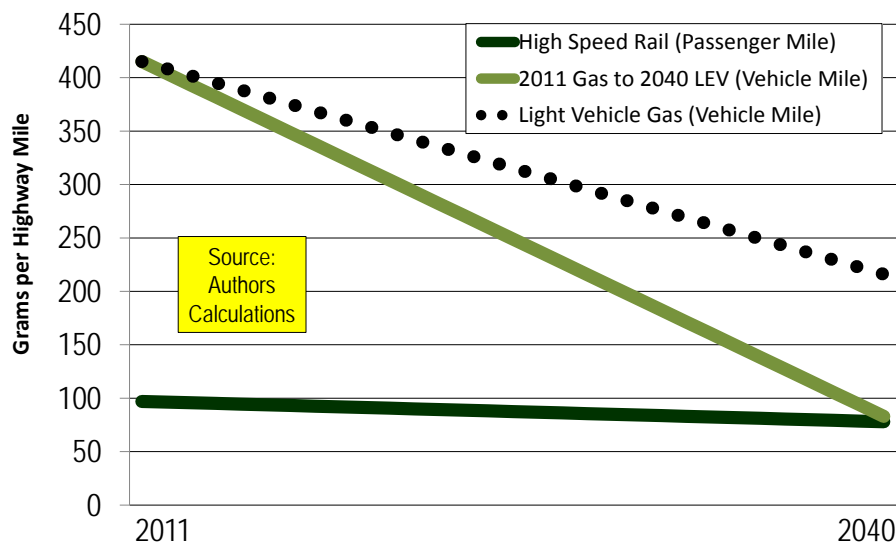


Figure 3

The conventional "static" GHG emissions reduction forecasting method used by CHSRA produces results that imply California will not reach its GHG emissions reductions objectives. Indeed, were the GHG emissions reduction scenario to emerge on which the CHSRA static forecasts are based, ***California's GHG emissions reduction program will have resulted in material failure.*** This is because CHSRA assumes future automobile fuel economy improvements that are far more pessimistic than state policy requires. Dynamic forecasting, on the other hand, assumes that California will reach its policy objectives, which the Brown Administration and CARB are determined to accomplish.

4. ALTERNATIVE GHG EMISSIONS REDUCTION FORECASTS

²⁵ The highly touted Madrid to Barcelona high speed rail line has an average load factor of approximately 60 percent, according to Frontier Economics, Atkins ITS (March 2011), *Appendix I: High Speed Railway Madrid-Barcelona*, European Commission, http://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/expost2006/wpb_cs1_barcelona.pdf. Other high speed rail systems also have considerably lower load factors. See Wendell Cox and Joseph Vranich, *The California High Speed Rail Proposal: A Due Diligence Report* (2008), Reason Foundation, <http://reason.org/files/1b544eba6f1d5f9e8012a8c36676ea7e.pdf>.

²⁶ Highway vehicle mile is used because CHSRA forecasts most of its travelers will have previously traveled by car. High speed rail travel requires longer distances than highway travel (for example, from San Francisco to Los Angeles the highway distance is approximately one-quarter shorter than by high speed rail. For highway travel, the appropriate comparison is highway miles, rather than miles of travel by train. It is conservatively assumed that *all* travelers attracted from cars to high speed rail would be drivers. The airline distance between San Francisco and Los Angeles is approximately one-third shorter than high speed rail). These longer distances increase GHG emissions from high speed rail.

The expected impacts of California's policy initiatives and the tendency of passenger forecasts to the overly optimistic suggest the necessity of alternative GHG emissions reduction forecasts.

4.1 Forecast Categories

Two general categories of forecasts are presented. The first category, "Dynamic Forecasts," is based on the underlying assumption that California will achieve its 2050 GHG emissions reduction target. The second category, "Static Forecasts," is limited to the effects of already adopted measures. These categories and three scenarios within each are illustrated in Table 1.

Table 1 California High Speed Rail GHG Emission Reduction Scenarios	
DYNAMIC FORECASTS	
Assumptions	Adoption of additional specific strategies necessary to achieve California's 2050 GHG emission reduction objective.
Implication	That the state will achieve its 2050 GHG emissions objective and will be on a trajectory to achievement in 2040
SCENARIOS	A-1: CHSRA (Scenario [B-1] adjusted for California 2050 policies): Insufficient Information
	A-2: Adjusted CHSRA (Scenario [B-1] adjusted for California 2050 policies)
	A-3: International Experience (Scenario [B-1] adjusted for California 2050 policies)
STATIC FORECASTS	
Assumptions	Impacts of legally binding strategies that have been adopted by government agencies.
Implication	That the state will fall far short of achieving its 2050 GHG emissions reduction objective.
SCENARIOS	B-1: CHSRA (CHSRA midpoint ridership forecast with CHSRA GHG emissions reduction forecast)
	B-2: Adjusted CHSRA (CHSRA midpoint ridership forecast with independent GHG emissions reduction forecast)
	B-3: : International Experience (International ridership forecast & independent GHG emissions reduction forecast)

A model was developed to estimate the GHG emissions reduction from the lower level light vehicle and airline for which high speed rail travel is substituted. Ridership data is from the CHSRA's *2014 Business Plan*,²⁷ which included updated forecasts between regions of California for 2040.²⁸ Based on these projections, this report provides independent estimates of high speed rail GHG emissions reductions at ridership indicated in the scenarios.

The model estimates the increase in GHG emissions reductions from the electricity generated and transmitted to power the trains,²⁹ other operating functions, such as stations, maintenance facilities and maintaining rail rights of way, as well as the additional light vehicle use that occurs as rail riders travel to stations to meet their trains. The methodology is described in Appendix A.

4.2 Dynamic Forecasts and Results

The Dynamic Forecasts assume that California will achieve its 80 percent GHG emissions reduction by 2050 and will be on a trajectory toward that accomplishment in 2040. Each of the Dynamic Forecasts

²⁷ *2014 Business Plan*

²⁸ Projected ridership between stations is not provided.

²⁹ High speed rail's electricity consumption (and thus its indirect GHG emissions) are increased by its less direct routing. Trains will travel approximately 505 miles from Los Angeles to San Francisco. This compares to a more direct 345 miles by airline and 380 miles by highway.

represents an attempt to replicate the projections in CARB's *Vision for Clean Air*.³⁰ It can be expected that the GHG emissions reductions from high speed rail under the Dynamic Forecasts will be significantly lower than under the Static Forecasts (The methodology is described in Appendix A).

This is because the GHG emissions that occur from light vehicles drop much more rapidly than the emissions from the high-speed rail system, as the conversion to ZEV vehicles continues (Figure 3, above). Once the ultimate ZEV share of the vehicle fleet is achieved, high-speed rail and light vehicle GHG emissions will be similar and can be expected to rise or fall at the same rate.³¹ Further, it is expected that airline GHG emissions per passenger mile will also improve, although not as substantially that of light vehicles.

The Dynamic Forecast scenarios and corresponding GHG emissions reduction results are as follows:

(A-1) CHSRA Scenario: The CHSRA scenario would have adjusted Scenario B-1 (ridership assumed at the CHSRA midpoint) for consistency with the 2040 trajectory required for achievement of California's 2050 GHG emissions reduction objective (an 80 percent decline). CHSRA's GHG emissions reduction report³² does not provide sufficient information to report a figure for Scenario A-1.

(A-2) Adjusted CHSRA Scenario: The Adjusted CHSRA scenario revises Scenario B-1 (ridership assumed at the CHSRA midpoint) for consistency with the 2040 trajectory required for achievement of California's 2050 GHG emissions reduction objective (an 80 percent decline). The 2040 annual reduction in high speed rail GHG emissions for Scenario B-2 is forecast at approximately 250,000 tonnes. As indicated in Box 1, this ridership would be much lower due to substantial reductions in the cost of driving relative to high speed rail that are expected to result from the CARB ZEV program. This would make the GHG emissions reductions from high speed rail smaller and could even result in an increase in GHG emissions (Section 3.3).

(A-3) International Experience Scenario: The International Experience scenario adjusts Scenario B-1 (ridership assumed at the international experience level) for consistency with the 2040 trajectory required for achievement of California's 2050 GHG emissions reduction objective (an 80 percent decline). The 2040 annual reduction in high speed rail GHG emissions for Scenario A-3 is forecast at approximately 120,000 tonnes. As indicated in Box 1, this ridership could be much lower due to substantial reductions in the cost of driving relative to high speed rail that are expected to result from the CARB ZEV program. This would make the GHG emissions reductions from high speed rail smaller and could even result in an increase in GHG emissions (Section 3.3).

4.3 Static Forecasts and Results

The Static Forecast GHG emissions scenarios are limited to the specific measures that have already been adopted by the state, CARB and the federal government. As noted in Section 2, in these measures will not be sufficient to meet California's 2050 GHG emissions reduction objectives.

³⁰ California Air Resources Board, *Vision for Cleaner Air*, <http://www.arb.ca.gov/planning/vision/vision.htm> and http://www.arb.ca.gov/planning/vision/docs/draft_scenario_assumptions_and_results_appendix.pdf and http://www.arb.ca.gov/planning/vision/docs/vision_for_clean_air_public_review_draft.pdf

³¹ This assumes a constant relationship between high speed rail ridership and automobile use.

³² California High Speed Rail Authority (June 2013), *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels*, http://www.hsr.ca.gov/docs/programs/green_practices/HSR_Reducing_CA_GHG_Emissions_2013.pdf.

The Static Forecast scenarios and corresponding GHG emissions reduction results are as follows:

(B-1) CHSRA Scenario: The CHSRA Scenario (Static Forecast) is limited to the effects of already adopted measures and assumes that no further policies to improve GHG emissions will be adopted by CARB, EPA or any other regulatory authority before 2040. CHSRA's 2040 GHG emissions reduction and midpoint 2040 ridership forecasts are assumed. The 2040 annual reduction in high speed rail GHG emissions for Scenario B-2 is forecast at approximately 1.54 million tonnes (the estimated midpoint for 2040 from the CHSRA GHG emissions reduction report³³).

(B-2) Adjusted CHSRA Scenario: The Adjusted CHSRA Scenario (Static Forecast) is limited to the effects of already adopted measures and assumes that no further policies to improve GHG emissions will be adopted by CARB, EPA or any other regulatory authority before 2040. The scenario assumes an independent GHG emissions reduction based on current government and others forecasts and uses the CHSRA 2040 midpoint ridership (as in Scenario A-2). The 2040 annual reduction in high speed rail GHG emissions for Scenario B-2 is forecast at approximately 0.59 million tonnes.

(B-3) International Ridership Scenario: The International Ridership Scenario (Static Forecast) is limited to the effects of already adopted measures and assumes that no further policies to improve GHG emissions will be adopted by CARB, EPA or any other regulatory authority before 2040. The scenario assumes an independent GHG emissions reduction based on current government and others forecasts uses the CHSRA ridership forecast reduced to account for the average inaccuracy indicated in the international research (Box 1). The 2040 annual reduction in high speed rail GHG emissions for Scenario B-3 is forecast at approximately 0.29 million tonnes.

<p>Box 1 Ridership Projections</p>
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<p>CHSRA ridership projections have been criticized for years as too optimistic. International research has indicated that passenger rail programs are routinely projected to carry many more passengers than they usually do. This is acknowledged in the "peer group report" appended to the <i>2014 Business Plan</i>, which references <i>Megaprojects and Risk: An Anatomy of Ambition</i>, the authoritative volume on the subject of infrastructure forecasting errors (both ridership and cost).³⁴ The principal author, Bent Flyvbjerg and associates have the research, which provides further illustration of the excessive optimism typical of rail passenger projections (Figure 4), indicating that 70 percent of projects have been more than 40 percent inaccurate in their passenger projections.³⁵ On average, passenger rail projects were found to draw 51.4</p>
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³³ California High Speed Rail Authority (June 2013), *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels*, http://www.hsr.ca.gov/docs/programs/green_practices/HSR_Reducing_CA_GHG_Emissions_2013.pdf.

³⁴ Bent Flyvbjerg, Nils Bruzelius and Werner Rothengatter, *Megaprojects and Risk: An Anatomy of Ambition*, (Cambridge, UK: Cambridge University Press, 2003)

³⁵ One of the most egregious cases of ridership over-projection is the London to Paris and Brussels *Eurostar*, which operates through the Channel Tunnel. As of 2011, *Eurostar's* ridership remained 60 percent below the original projection made for 2006. See: Joseph Vranich & Wendell Cox, "California High Speed Rail: An Updated Due Diligence Report," Reason Foundation (2013), http://reason.org/files/california_high_speed_rail_report.pdf.

percent fewer riders than projected.³⁶ This figure is used for the International Ridership Scenarios in this report (calculated from the CHSRA Midpoint ridership forecasts).

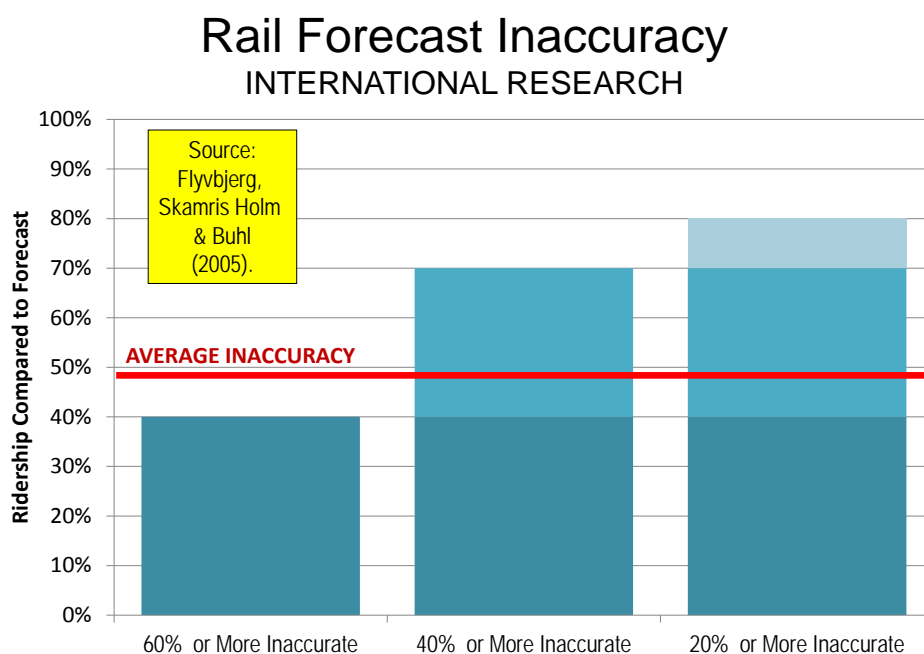


Figure 4

Further, CARB's ZEV program could substantially reduce the cost of travel by light vehicle. For example, the present fuel cost of travel by electric vehicles is approximately half that.³⁷ This would reduce the forecast attraction of high speed rail, because its fares would be higher relative to the cost of traveling by light vehicle and could substantially reduce high speed rail ridership. This would reduce or eliminate GHG emissions reductions from high speed rail.

The estimated GHG emissions reductions are indicated in Figure 5, Table 2 and Appendix Table B-1.

³⁶ Bent Flyvbjerg, Mette Skamris Holm, Søren L. Buhl (2005), How (In)accurate Are Demand Forecasts in Public Works Projects? The Case of Transportation, <http://www.tandfonline.com/doi/abs/10.1080/01944360508976688#.UwjoLvldV5s>.

³⁷ Assumes electricity consumption by light vehicles of 30 kilowatt hours per 100 miles.

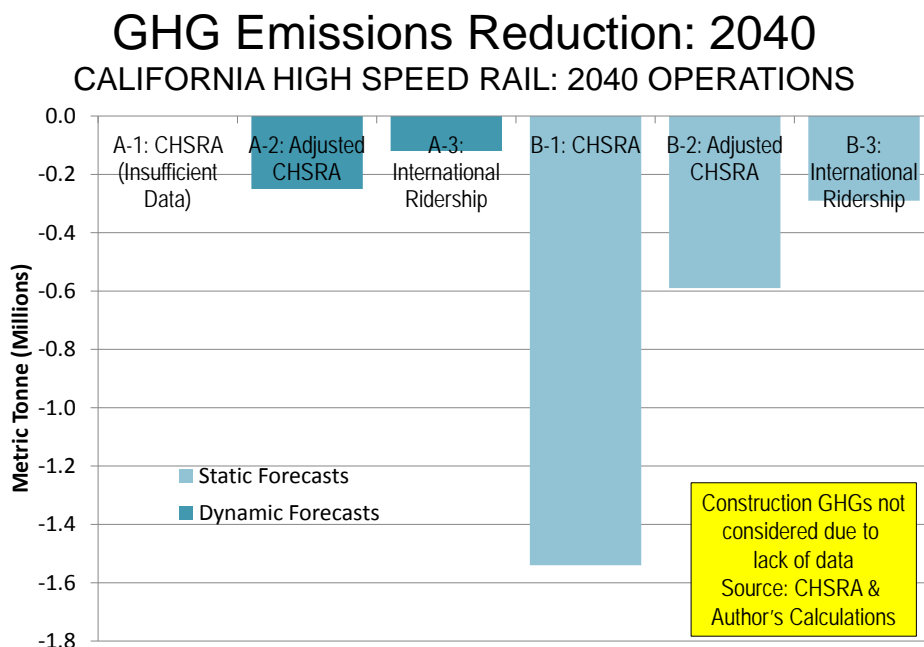


Figure 5

Table 2			
Greenhouse Gas Emission Reductions from High Speed Rail: 2040			
Scenarios	CHSRA	Adjusted CHSRA	International Experience
Dynamic Forecasts	Insufficient Information	-0.25	-0.12
Static Forecasts	-1.54	-0.59	-0.29
In millions of metric tonnes			
Phase 1 Blended System			
Construction GHGs not considered due to lack of data.			
Sources: CHSRA and author's calculations			

5. COST EFFECTIVENESS OF HIGH SPEED RAIL GHG EMISSIONS REDUCTIONS

As is noted above, California's GHG emissions reduction objectives are aggressive and will be challenging to meet.

5.1 The Importance of Cost Effectiveness

The chances that California's objective will be enhanced if the strategies selected are the most cost effective. A prioritization by cost-effectiveness is key for two reasons.

(1) The funds for reducing GHG emissions are limited. Expenditures on strategies that are not optimally cost-effective reduce the GHG emission reduction that is possible. In effect, less cost effective strategies "crowd out" the cost effective strategies.

(2) The use of less cost effective strategies necessarily increases the cost of reducing GHG emissions. These higher costs will take a toll on the economy, requiring higher levels of mitigation fees and taxation, resulting in an overall lower standard of living (as measured by discretionary household income) and higher rates of poverty.

There is general agreement that the GHG emissions reduction requires that cost-effectiveness metrics be applied to proposed strategies. For example:

The European Conference of Ministers of Transport said in a policy document: *It is important to achieve the required emissions reductions at the lowest overall cost to avoid damaging welfare and economic growth.*³⁸

CARB has also stressed the importance of cost effectiveness in its *February 2014 Scoping Report*.

5.2 The Cost of Reducing GHG Emissions

The most common metric for GHG emissions reduction is the cost per metric ton. There are various cost effectiveness estimates for reducing GHG emissions, which are taken at face value in this report:

1. McKinsey & Company has estimated GHG emissions sufficient to achieve IPCC recommended reduction rates to 2030 can be achieved at an average cost of *minus* \$9 per ton, with a range of from minus \$250 to plus \$116.³⁹ McKinsey & Company estimated that 35 percent of the reductions were possible for less than \$0. 40 percent from \$0 to \$29 and 10 percent from \$29 to \$58.⁴⁰
2. Carbon credits can be purchased, with the intention of reducing GHG emissions by one ton per credit. This is the mechanism CHSRA intends to use to offset its GHG emissions from construction, through tree planting programs. Carbon credits can also be purchased by consumers to offset the GHG emissions from air travel. The cost per ton of GHG emissions

³⁸ European Conference of Ministers of Transport (2006), *Transport and Environment: Review of CO2 Abatement Policies for the Transport Sector Conclusions and Recommendations*, European Council of Ministers of Transport. <http://www.internationaltransportforum.org/Topics/pdf/07CO2summary.pdf>

³⁹ The original figures are stated in 2006 Euros and converted here to 2013\$. See: McKinsey and Company (2010), *The Impact of the Financial Crisis on Carbon Economics: Version 2.1 of the Global Greenhouse Gas Abatement Cost Curve*, http://www.mckinsey.com/~media/McKinsey/dotcom/client_service/Sustainability/cost%20curve%20PDFs/ImpactFinancialCrisisCarbonEconomicsGHGcostcurveV21.ashx

⁴⁰ The United Nations Intergovernmental Panel on Climate Change (IPCC) indicated that there is a high level of confidence that a cost range of \$20 to \$50 annually per GHG ton "reached globally in 2020–2030 and sustained or increased thereafter would deliver deep emission reductions by midcentury. Terry Barker, Igor Bashmakov, et al, "Mitigation from a cross-sectoral perspective," Intergovernmental Panel on Climate Change, 2008, www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter11.pdf p. 660

reduction is approximately \$13.⁴¹ This is slightly higher than the clearing price in the November 2013 California cap and trade auction (\$11.48).

There are indications that the costs above may be higher than necessary. United States Environmental Protection Agency (EPA) and CARB programs are expected to reduce GHG emissions at costs of *less than zero*.

Two Obama administration regulatory actions have been adopted to improve light vehicle fuel efficiency through 2017 and 2025. Under each of these already adopted regulations, the EPA estimated that the cost for GHG emission ton removed would be approximately *minus* \$200 by 2040 and *minus* \$300 by 2050.⁴²

CARB has estimated that its ZEV vehicle program will produce consumer savings that are more than double its costs, which like the EPA programs, means that costs were negative.⁴³

In short, it does not appear to be necessary to spend more than an average of near zero per ton of GHG emissions reduction.

5.3 Cost Effectiveness of GHG Emissions Reductions from High Speed Rail

As in the case of the GHG emissions reduction analysis above, costs are estimated for the year 2040 and indicated in year 2013 constant dollars. Generally, the cost of high-speed rail is the total annual capital and operating costs of the system minus costs that are saved as a result of a reduction in light vehicle use and airline flights (The methodology is described in Appendix A).

These costs are divided by the GHG emissions reductions projected for each scenario in Section 4. The results of the cost analysis are:

Dynamic Forecasts: Under the dynamic forecasts, the cost per tonne of GHG emission reductions would range from \$7,100 to \$18,600. As is indicated in Section 6, these figures are many times international metrics for cost effective GHG emission reductions.

Static Forecasts: Under the static forecasts, which assume today's policies and no further initiatives to improve automobiles fuel economy, the cost per tonne of GHG emissions would range from \$1,000 to \$8,000. These figures are also many times international metrics for cost effective GHG emission reductions.

The net high speed rail costs are illustrated in Table 3. The costs per tonne are indicated by scenario in Figure 6, Figure 7, Table 4 and Appendix Table B-2.

⁴¹ See "Terrapass.com," <http://www.terrapass.com/shop/>, accessed February 22, 2014.

⁴² US Environmental Protection Agency, *Regulatory Impact Analysis: Final Rulemaking for 2017-2025 Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards*, <http://www.epa.gov/otaq/climate/documents/420r12016.pdf> and *Final Rulemaking to Establish Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards Regulatory Impact Analysis*, <http://www.epa.gov/otaq/climate/regulations/420r10009.pdf>

⁴³ California Air Resources Board (2012), *Proposed LEV III Economic Analysis: Technical Support Document*, <http://www.arb.ca.gov/regact/2012/leviiiighg2012/levapps.pdf>

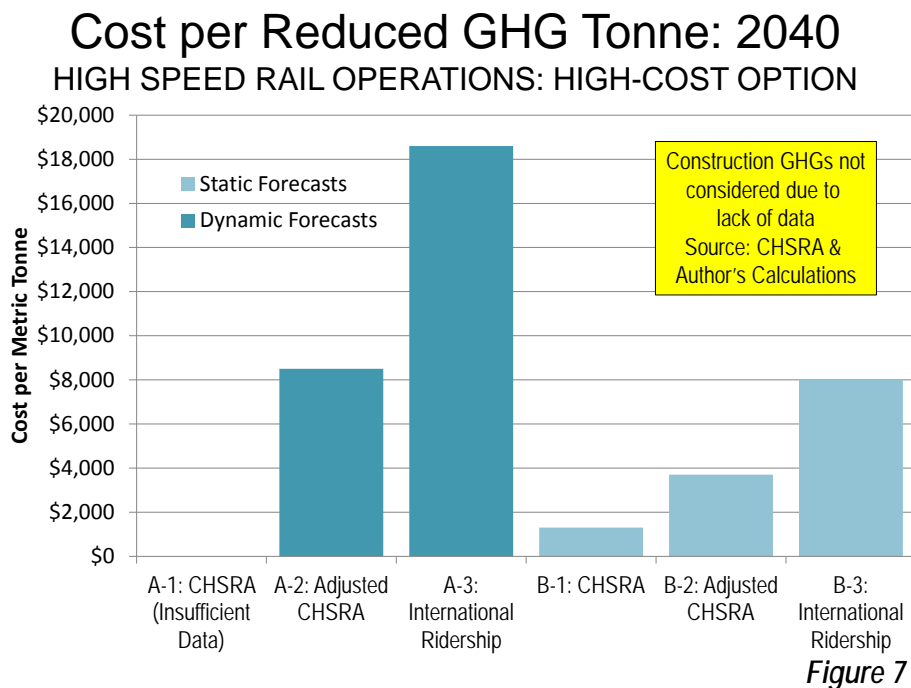
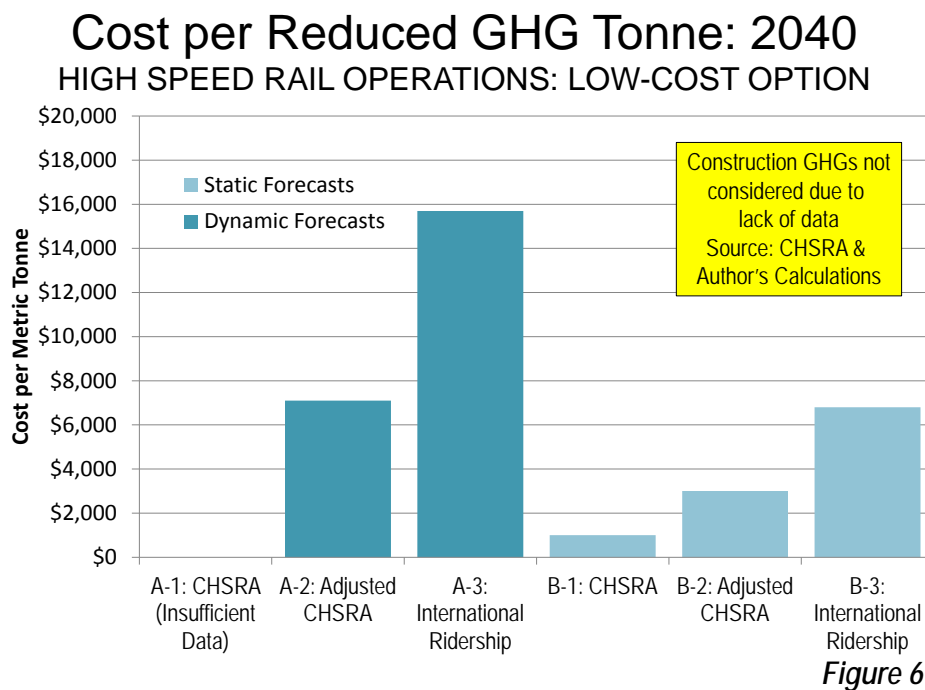


Table 3			
Costs of Greenhouse Gas Emission Reductions from High Speed Rail: 2040 (2013\$)			
	CHSRA	Adjusted CHSRA	International Experience
Low Capital Cost Option	\$1.57	\$ 1.78	\$ 1.96
High Capital Cost Option	\$1.93	\$ 2.14	\$ 2.31
In billions of 2013\$			
Sources: CHSRA and author's calculations			

Table 4			
Cost per Metric Tonne of Greenhouse Gas Emission Reductions from High Speed Rail: 2040 (2013\$)			
	CHSRA	Adjusted CHSRA	International Experience
Low Capital Cost Option			
Dynamic Forecasts	Insufficient Information	\$ 7,100	\$ 15,700
Static Forecasts	\$ 1,000	\$ 3,000	\$ 6,800
2013\$			
High Capital Cost Option			
Dynamic Forecasts	Insufficient Information	\$ 8,500	\$ 18,600
Static Forecasts	\$ 1,300	\$ 3,700	\$ 8,000
2013\$			
Construction GHGs not considered due to lack of data.			
Sources: CHSRA and author's calculations			

6. PRIORITIZING GHG EMISSIONS REDUCTION STRATEGIES

The Legislative Analyst's Office recommended that GHG emissions reductions program be prioritized based on their cost effectiveness, in analyzing the Governor's 2012-2013 budget proposal to use cap and trade revenues for high speed rail.

... we recommend that the Legislature prioritize GHG mitigation programs that have the greatest potential return on investment in terms of emission reductions per dollar invested.⁴⁴

The Legislative Analyst's Office continues, stressing the importance of avoiding unnecessary economic disruption by a rational prioritization of projects:⁴⁵

In order to minimize the negative economic impact of cap-and-trade, it is important that auction revenues be invested in a way that maximizes GHG emission reductions for a given level of spending.

⁴⁴ Legislative Analyst's Office, *The 2012-13 Budget: Funding Requests for High-Speed Rail*, <http://www.lao.ca.gov/analysis/2012/transportation/high-speed-rail-041712.aspx>

⁴⁵ Mac Taylor (February 24, 2014), *The 2014-15 Budget: Cap-and-Trade Auction Revenue Expenditure Plan*, Legislative Analyst's Office, <http://www.lao.ca.gov/reports/2014/budget/cap-and-trade/auction-revenue-expenditure-022414.aspx>.

Given these concerns, we recommend that the Legislature direct ARB to develop metrics for departments to use in order to prospectively evaluate the potential GHG emission benefits of proposed projects, as well as direct the board to establish a set of guidelines for how departments should incorporate these metrics into their decision-making processes. Having such metrics to use as part of departments' decision-making processes when determining how program funding will be spent would provide greater certainty regarding the potential GHG emission reductions of projects being considered for funding

Such a program is a necessary pre-condition to any serious and defensible program for meeting the state's GHG emissions reduction objectives.

The high-speed rail system has not been prioritized based on its cost effectiveness compared to other strategies for reducing GHG emissions. Yet, the costs per ton of GHG emissions reduction from high speed rail is substantially higher than both the metrics and the experience in EPA and CARB programs cited above. The cost of high-speed rail GHG emissions reduction is from 75 to 1,400 times that of current market offset programs such as purchasing carbon offsets (Table 5).

Table 5				
Comparison: Cost of GHG Emissions Reductions per Tonne				
	Low Capital Cost Option	HSR Times Carbon Offset Programs	High Capital Cost Option	HSR Times Carbon Offset Programs
Abatement Cost				
EPA Fuel Economy Standards 2040	-\$200		-\$200	
Carbon Offsets per Tonne	\$13	1	\$13	1
California AB32 Cap & Trade Auction (November 2013)	\$11		\$11	
McKinsey & Company Average	-\$9		-\$9	
UN IPCC	\$20 - \$50		\$20 - \$50	
Dynamic Forecasts				
A-1: CHSRA	Insufficient Information	Insufficient Information	Insufficient Information	Insufficient Information
A-2: CHSRA Adjusted	\$7,100	537	\$8,500	643
A-3: International Experience	\$15,700	1,188	\$18,600	1,408
Static Forecasts				
B-1: CHSRA	\$1,000	76	\$1,300	98
B-2: CHSRA Adjusted	\$3,000	227	\$3,700	280
B-3: International Experience	\$6,800	515	\$8,000	606
Construction GHGs not considered due to lack of data.				
Sources: Authors calculations and text				

Diverting Cap and Trade Funds

The proposal in the 2012 – 2013 budget to fund the high-speed rail from cap and trade revenues was dropped after political opposition. Yet, the 2013 – 2014 budget included a loan from cap and trade funding to the state for general purposes. There is also the 2014 – 2015 budget proposal to transfer \$250 million of cap and trade revenues to high-speed rail. In addition, the Administration has indicated that cap and trade funds should become an even larger share of high-speed rail funding in the future.⁴⁶

⁴⁶ Chris Megerian and Ralph Vartabedian (February 24, 2014), "Gov. Jerry Brown wants polluters' fees to help fund high-speed rail," <http://www.latimes.com/local/la-me-brown-rail-20140228,0,4977021.story#ixzz2ubyMC1e8>.

As indicated above, GHG emission reductions from high-speed rail are far more expensive than necessary and the improvements in light vehicle emissions from CARB policies will substantially diminish these reductions in future years (Section 3.3). The result is an egregiously inefficient use of cap and trade revenues.

The context of the \$250 million is illustrated by the fact that it is sufficient to purchase carbon offsets at the current market rate nearly equal to 90 percent of the GHG emissions reduction required between 2011 and 2020.⁴⁷

To place this in terms parallel to those expressed by CHSRA, the GHG emissions reduction from the \$250 million in cap and trade revenue, spent on carbon credits would *before 2020* be the equivalent of 3,800,000 cars taken off the road annually.⁴⁸ That many cars would stretch 38,000 miles on a single highway lane – equal to circling the world 1.5 times – and is nearly equals the total number of light vehicles in the San Francisco and San Jose metropolitan areas.⁴⁹ (As noted above, CHSRA stated that in its first year of operations [2022], high-speed rail would reduce GHG emissions by the equivalent of 31,000 cars, which it said would stretch 100 miles on a single lane highway).

Longer Term Implications

The longer term impacts are even more stark. This is illustrated by applying the costs of high speed rail GHG emissions reductions in 2040 to the reductions required to achieve the 2050 state objective of an 80 percent reduction.

Based on the 1990 statewide GHG emissions figure, the 80 percent reduction to 2050 would represent approximately 340 million annual tonnes.

The longer run cost intensity is illustrated by applying the minimum high speed rail 2040 costs per tonne (CHSRA Scenario [B-1]) to 80 percent annual 2050 GHG emissions reduction required by state policy from 1990. This calculates to nearly \$350 billion (2013\$), which is approximately 1/7 the present size of California's gross domestic product (GDP). Under the more likely Dynamic Forecast: International Ridership Scenario (A-3) the cost would be up to \$6.2 trillion (2013\$). This is up to three times the size of California's GDP, larger than the GDP of Japan and larger than the output of every country in the world except for the United States and China in 2013.

High Speed Rail: A Temporary Strategy? By 2040 the gap between high-speed rail GHG emissions and light vehicle GHG emissions per passenger mile that is presently so large will have been substantially closed. Within the next decade, further improvements in fuel economy are expected by CARB, which would lead to a virtual elimination of the GHG emissions advantage of high speed rail over cars (at any level of ridership). Thus, high-speed rail would no longer make even its modest commitment to GHG

⁴⁷ In 2011, the statewide GHG emissions were 448 million tonnes. The 2020 objective is 427 million tonnes. At \$13.21 per tonne for a tree planting program (as CHSRA intends to use to abate its construction GHG emission increases), approximately \$275 million would be required. The proposed \$250 million cap and trade funds expenditure of \$250 million is approximately 90 percent of \$275 million.

⁴⁸ This calculation uses the automobile GHG emissions and lane capacity assumptions in California High Speed Rail Authority (June 2013), *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels*,

⁴⁹ According to the US Census Bureau American Community Survey, households in the San Francisco and San Jose metropolitan areas had slightly fewer than 4.0 million vehicles available in 2012. At 5 metric tonnes of GHG annually, the 20 million annual emissions would be 20 million tonnes. This compares to the 19 million tonne reduction required in 2020 relative to 2011.

emissions reductions by the 2060 planning horizon indicated in the *2014 Business Plan*. The impact of high-speed rail on GHG emissions reductions could thus be only temporary, yet hugely expensive.

Political Sustainability

The purpose of California's GHG emissions reduction program is environmental sustainability. Yet, in the final analysis, the survival of public policies requires sufficient public support. Environmental sustainability rests on a foundation of political sustainability.

Appropriation of cap and trade revenues to cost-inefficient strategies such as high-speed rail may not be politically sustainable. A perception that cap and trade revenues are simply a source of funds subject to political whim could fuel political pressure that leads to dilution or abandonment of the state GHG emissions reduction objectives. Over the three and one-half decades between now and 2050, there will be countless opportunities for "raids" on cap and trade revenues.

Moreover, such developments could worsen California's business climate and competitive position relative to other states. Business expansion and site selection in the state could be discouraged by fear that the failure to properly use cap and trade revenues, which are meant to mitigate GHG emissions, would create a demand for even greater financial or regulatory burdens.

7. THE IMPERATIVE FOR COST-EFFECTIVENESS AND REALISM

The Legislative Analyst's Office concluded that the high-speed rail project would contribute little to the GHG emissions reductions in the state,⁵⁰ a conclusion echoed in this report. High-speed rail would not advance the objectives of AB32 because its reductions would all occur after its 2020 deadline. Further, high-speed rail would retard achieving AB32 objectives by using cap and trade funds for purposes that cannot compete in an objective prioritization of cost-effective uses.

The longer-term implications are even more counter-productive. At most, high-speed rail would contribute one half of one percent (0.5 percent) of the required GHG emissions required in 2050 (Figure 8).⁵¹ The greater likelihood is that the contribution will be much smaller, due not only to the likely over-projection of ridership, but also the diminishing, if not disappearing gap between GHG emissions reductions per mile traveled on high speed rail versus light vehicles (Section 3.3). This anticipated policy outcome illustrates the importance of GHG emissions analysis that is dynamic, rather than static. Planning and analysis can only be justified to the extent that it is based in reality.

It is not surprising that high-speed rail is so costly as a strategy for reducing GHG emissions. The most important national and state strategies for reducing GHG emissions from transportation --- programs by the EPA and CARB to improve fuel economy --- are projected to reduce GHG emissions at negative costs of more than \$200 per tonne. By contrast, California's high speed rail line would result in comparatively small reductions in the state by comparison, yet would require substantial capital and operating costs.

⁵⁰ Legislative Analyst's Office, *The 2014-15 Budget: Overview of the Governor's Budget 2014-5*, <http://www.lao.ca.gov/reports/2014/budget/overview/budget-overview-2014.aspx>

⁵¹ This would require the achievement of CHSRA's midpoint GHG emissions reduction forecast in 2050, which is highly unlikely (as this report indicates).

High-speed rail would be a hideously expensive strategy that would consume resources that could be more effectively used to reduce GHG emissions. The use of cap and trade revenues for any use other than the most effective suggests a lack of seriousness toward GHG emissions reduction. There is no doubt that reaching California's goals will be challenging. Success is not guaranteed. If California's GHG emissions reduction goals are imperative, then it is equally imperative that they be pursued with the maximum cost effectiveness.

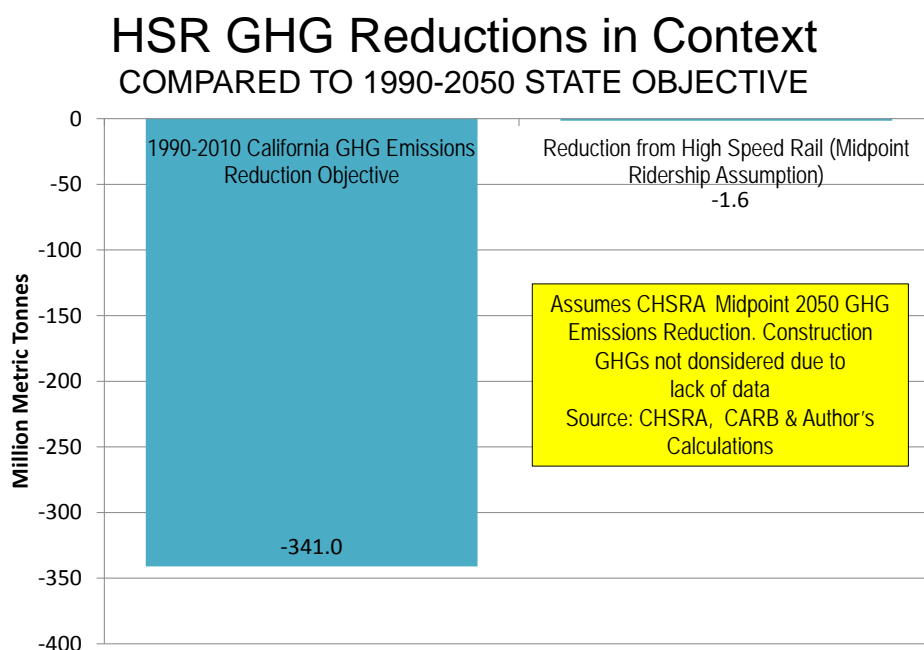


Figure 8

8. LEGALITY OF CAP AND TRADE FUNDING FOR HIGH SPEED RAIL

The principal purpose of this report is to assess the GHG emissions reduction potential of the California high-speed rail line and the relative costs per tonne of any such reduction. There are also considerable legal issues with respect to the use of cap and trade revenues, as proposed by the Brown Administration.

Use of AB32 cap and trade revenues for high-speed rail could be illegal. The Legislative Counsel has advised the Legislative Analyst's Office that funds from cap and trade auctions are "mitigation fees," and that their use for high-speed rail could be illegal.

Use of cap and trade revenues for high-speed rail may be legally challenged as an inappropriate use of "mitigation fees." The Legislative Counsel has advised the Legislative Analyst's Office that funds from cap and trade auctions are "mitigation fees," and that their use for high-speed rail could be illegal for failure to meet the "Sinclair nexus test." A subsequent court ruling found that cap and trade revenues are not taxes.⁵²

⁵² Legislative Analyst's Office, *The 2012–13 Budget: Cap-and-Trade Auction Revenues*, <http://www.lao.ca.gov/analysis/2012/resources/cap-and-trade-auction-revenues-021612.aspx>

Further, using cap and trade funds for high-speed rail could violate the intent of the authorizing legislation, AB32. According to the Legislative Analyst's Office:

The primary goal of AB 32 is to reduce California's GHG emissions statewide to 1990 levels by 2020. Under the revised draft business plan, the IOS would not be completed until 2021 and Phase 1 Blended would not be completed until 2028. Thus, while the high-speed rail project could eventually help reduce GHG emissions somewhat in the very long run, given the project's timeline, it would not help achieve AB 32's primary goal of reducing GHG emissions by 2020. As a result, there could be serious legal concerns regarding this potential use of cap-and-trade revenues. It would be important for the Legislature to seek the advice of Legislative Counsel and consider any potential legal risks,⁵³

In addition to the potential legal problems with using AB32 revenues for high speed rail, high speed rail is not a cost effective GHG emissions reduction strategy (Section 6).

APPENDIX A: METHODOLOGY

CHSRA does not provide a sufficiently detailed methodology to replicate their GHG emissions impacts. As a result, a model was developed for this report that estimates GHG emissions impacts from other information in CHSRA documentation and other sources.

GHG Emissions Impact Estimates

The year 2040 is chosen for analysis, because the *Draft 2014 Business Plan* provides detailed ridership projections between the major markets. These ridership data are used to estimate the extent of passenger travel (in passenger miles). For simplicity, all longer distance demand (more than 300 miles) is assumed to have been diverted from airlines and all shorter distance demand from light vehicles.

CHSRA's June 2013 report did not specifically denote its projected GHG emissions reduction for 2040. However, information was provided for 2035 and 2050, making it possible to estimate a figure for 2040. It is assumed that the CHSRA 2040 figure for GHG emissions reduction would range from 1.18 million annual tonnes to 1.90 million annual tonnes.⁵⁴

Static Forecasts: The reduced GHG emissions that would occur from the transfer of riders to high-speed rail is then estimated for each of the former modes of travel under the Static Forecasts.

Former light vehicle drivers: CO2 emissions are estimated using a base of the 2040 US Department of Energy, Energy Information Administration (*2014 Annual Energy Outlook*) projected mile for the light vehicle stock of 216 grams per vehicle mile.⁵⁵ This figure is increased 5 percent to account for the difference between CO2 emissions and CO2 equivalent emissions,

⁵³ Legislative Analyst's Office, *The 2012-13 Budget: Funding Requests for High-Speed Rail*, <http://www.lao.ca.gov/analysis/2012/transportation/high-speed-rail-041712.aspx>

⁵⁴ California High Speed Rail Authority (June 2013), *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels*,

⁵⁵ US Department of Transportation, Energy Information Administration, *Annual Energy Outlook 2014*.

because greenhouse gases other than CO₂ are not included.⁵⁶ All of the miles driven are then adjusted by the share of travel in city driving versus highway driving. Each of these figures is then reduced by 10% to account for the impact of the California Low Carbon Fuel Standard. It is assumed that all train travelers attracted from cars had driven alone previously.

Former airline passengers: CO₂ emissions are estimated using data from the *SAS Advanced Emission Calculator* for flights in California.⁵⁷ This figure is adjusted downward by approximately 6 percent to account for the improvement in airline fuel efficiency to 2040 as indicated in the *2014 Annual Energy Outlook*, and increased 5 percent to account for the difference between CO₂ emissions and CO₂ equivalent emissions.

Amtrak: New GHG emissions reductions are assumed for passengers transferring from conventional (Amtrak) services to high-speed rail. Amtrak's "San Joaquin" service operates from Oakland to Bakersfield and serves stations that would not be served by high-speed rail, including Oakland, Emeryville, Richmond, Martinez, Antioch-Pittsburg, Stockton, Turlock, Modesto, Merced, Corcoran and Wasco. It is assumed that Amtrak trains will continue to operate without service reductions and as a result there would be little or no reduction in GHG emissions from passengers who use high-speed rail instead.

Induced Travel: All other travel on high-speed rail would be by passengers who would not have made the trip if the high-speed rail system had not been available. Because these induced travelers did not travel previously, it is assumed that there would be no change in GHG emissions.

Light Vehicle Access to High Speed Rail Stations: Additional light vehicle travel will be required traveling to and from high-speed rail stations. This will increase GHG emissions. Overall, it is assumed that 75 percent of station access will be by light vehicle. For origins or destinations without high speed rail stations, the one way travel distance between the nearest station and the urban center is used (such as San Diego and Sacramento. Between the San Francisco Bay Area and Los Angeles no access factor is added, on the assumption that passengers will simply use their previous travel mode of airport access to reach train stations. In other markets, access distance per train trip of between five and 10 miles is assumed, depending on the size of the urban area. Overall, 75 percent of train riders are assumed to access stations by light vehicle. These conservative assumptions are used because no alternate source of such estimates was identified.

Powering High Speed Rail Trains: The literature indicates a wide range of electricity power consumption by high-speed rail. This model assumes the 0.04 kilowatt hours per seat kilometer (per seat kilometer) indicated for trains with top speeds of up to 186 miles per hour (300 kilometers per hour).⁵⁸ However, California's high-speed rail trains are planned to operate at a top speed of 220 miles per hour (354 kilometers per hour), a speed that has been approached only in China (350 kilometers per hour), which has since reduced operating speeds to a maximum of approximately 193 miles per hour (310

⁵⁶ This is consistent with the treatment in California High Speed Rail Authority, *Draft Environmental Impact Report/Statement: Fresno to Bakersfield*, Table 3.3-17, http://www.hsr.ca.gov/docs/programs/fresno-baker-eir/draft_EIR_FresBaker_Vol1_3_3.pdf.

⁵⁷ *SAS Advanced Emission Calculator*, <http://www.flysas.com/en/us/travel-info/other/co2-compensation/>

⁵⁸ Yuki Tanaka, Louis S. Thompson, Lee Schipper, Andrew Kosinski, and Elizabeth Deakin (2010), *Analysis of High Speed Rail's Potential to Reduce CO₂ Emissions from Transportation in the United States*, Paper presented to the World Conference on Transportation Research.

kilometers per hour). Research in China⁵⁹ indicates that 28 percent more in power is required to operate trains at such speeds compared to 186 miles per hour (300 kilometers per hour), which was formerly the highest speeds attained by high speed rail. It is assumed that the trains would reach 350 miles per hour on the genuine high speed rail right of way and no more than 120 miles per hour on the commuter rail right of way (and power requirements are assumed to be lower at 120 miles per hour, consistent with the relationship in the China research).

Consistent with CHSRA data, it is assumed that each train set would have 450 seats.

GHG Emissions from the Train: The trains will not directly produce GHG emissions, however the generation and transmission of electricity for the trains produces GHG emissions. It is assumed that high-speed rail trains will indirectly produce GHG emissions at the average generation and transmission loss mix of electricity consumed in California. According to the California Air Resources Board, California electricity generation and transmission losses produced 0.318 GHG tonnes per megawatt hour consumed in 2011.⁶⁰ This figure is adjusted downward to achieve the 33 percent renewable power standard implemented by CARB for 2020 and beyond.

Other High Speed Rail Functions: It is assumed that the GHG emissions from day to day functioning of high-speed rail stations, maintenance facilities and maintenance rail rights of way would be at the same relationship of GHG emissions from the trains (see *Propulsion Power* above), as is indicated in CHSRA documentation in the Fresno to Bakersfield corridor.⁶¹

Dynamic Forecasts

The "Dynamic Forecasts" adjust the Static Forecasts to replicate an underlying assumption that California will, in 2040, beyond the trajectory to achieve its 2050 GHG emissions reductions, particularly in the transportation sector.

Examples of adjustment to the methodology include:

Adoption of an additional 10 percent Low Carbon Fuel Standard.

Achievement of an 87 percent ZEV share of light vehicles.⁶²

Achievement of the Federal Aviation Administration "CLEEN" airline fuel efficiency standards.⁶³

⁵⁹ Zhang Xing chen, Feng Xuesong, Mac Baohua, Jia Shunping and Feng, Xujie (2011), *Simulation Research on the Traction Energy Consumption of High Speed Trains in China*, Journal of Transportation Systems Engineering and Information Technology.

⁶⁰ Calculated from data in California Air Resources Board (October 2, 2013), *California Greenhouse Gas Emissions for 2000 to 2011, – Trends of Emissions and Other Indicators*, http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_trends_00-11_2013-10-02.pdf

⁶¹ As indicated in California High Speed Rail Authority, *Draft Environmental Impact Report/Statement: Fresno to Bakersfield*, Table 3.3-17, http://www.hsr.ca.gov/docs/programs/fresno-baker-eir/draft_EIR_FresBaker_Vol1_3_3.pdf

⁶² California Air Resources Board, Public Hearing to Consider Advanced Clean Cars Program, <http://www.arb.ca.gov/board/books/2012/012612/12-1-2pres.pdf>.

⁶³ *United States Aviation Greenhouse Gas Emission Reduction Plan* (2012), https://www.faa.gov/about/office_org/headquarters_offices/apl/enviro_policy_guidance/policy/media/Aviation_Greenhouse_Gas_Emissions_Reduction_Plan.pdf

Costs under the Dynamic Forecasts are unchanged, principally because of uncertainties about the operating costs of light vehicles with alternative technologies in 2040.

Cost Impacts:

All costs are expressed in inflation adjusted 2013 dollars and apply to the year 2040.

Annual Capital Cost: Equivalent annual capital costs are developed for the low-cost option and the high cost option using a real interest rate of 3 percent is used over 50 years. There has been considerable variation in federal guidance on annualization rates for capital costs in recent years. As late as 2003, federal guidance recommended the use of real discount rates of 7 percent and 3 percent.⁶⁴ More recently, this has been reduced to 1.9 percent. The US Department of Transportation, Federal Transit Administration (FTA) requires a 2.0 percent rate.⁶⁵ Over the last 30 years, the average real US Treasury bond rate has been 3.3 percent.⁶⁶ It seems likely that the annualization rate will increase toward more historic rate as the Federal Reserve Board's quantitative easing policy is phased out. Virtually all of the high speed capital costs are to be incurred in future years, and an annualization rate of 3.0 percent seems appropriate.

A sensitivity analysis was performed to estimate the differences in cost per tonne of GHG emissions from high speed rail at varying annualization rates. At the FTA real annualization rate of 2.0 percent, the cost per GHG emission tonne reduction would be approximately \$800, compared to the \$1,000 at the 3.0 percent rate for the most favorable scenario in this report (Static Forecast: CHSRA Scenario). At the former OMB real annualization rate of 7.0 percent, the cost per GHG emission tonne reduction would be \$2,200. The use of shorter annualization periods would increase the annualized capital costs.

Annual Operating and Maintenance Cost: The annual operating cost is taken from the *Draft 2014 Business Plan*.

Airline Cost: The savings in airline cost per passenger is based on the passenger fare assumption in the *Draft 2014 Business Plan*.

Light vehicle Cost: The savings in light vehicle cost per vehicle mile is based on the per mile assumptions in the *Draft 2014 Business Plan*.

CHSRA Cost Analysis: CHSRA's GHG emissions reduction report does not include a cost analysis (from which a cost per tonne could be calculated). As a result, the independent cost analysis developed for the Adjusted CHSRA Scenario is used for the CHSRA Scenario.

Caveats

This report produces "dynamic forecasts" of GHG emissions reductions. Dynamic forecasting is generally not employed by public agencies and can be inconsistent with planning guidelines. However, the failure to employ dynamic forecasting --- as may be required by planning regulations and convention --- in

⁶⁴ US Office of Management and the Budget (September 3, 2003), *Circular A-4*, http://www.whitehouse.gov/sites/default/files/omb/assets/regulatory_matters_pdf/a-4.pdf.

⁶⁵ Federal Transit Administration, *New and Small Starts Rating and Evaluation Process Final Policy Guidance August 2013*, http://www.fta.dot.gov/documents/NS-SS_Final_PolicyGuidance_August_2013.pdf.

⁶⁶ Calculated from Office of Management and Budget (December 26, 2013), *Budget Assumptions*, <http://www.whitehouse.gov/sites/default/files/omb/assets/a94/dischist-2014.pdf>.

California's transformative GHG emissions reduction policy environment can render conventional static forecasting to be grossly inaccurate and of little relevance.

This report represents a provisional attempt to develop dynamic forecasts, although it is expected that public agencies, with their far greater resources could substantially improve both the methodology and accuracy. In developing the dynamic forecasts, this report has tended toward conservative assumptions that give the "benefit of the doubt" to high speed rail.

Moreover, the forecasts are at substantial variance with GHG emissions reduction cost metrics. Thus, improvements to the methodology would not be likely to result in differences material enough to alter the public policy conclusion that high speed rail is an exceedingly expensive, and only a temporary measure for reducing GHG emissions.

Further, because no credible assumption was identified the average vehicle occupancy of cars whose occupants travel instead by high speed rail, it was assumed that each car taken off the road had a single occupant, the driver. A more likely higher assumption (such as two passengers per light vehicle) would reduce the GHG emissions reduction per light vehicle and reduce the high speed rail advantage. Similarly, the attraction of a light vehicle passenger who is not the driver to high speed rail would not result in a reduction of GHG emissions by high speed rail. This 1.0 light vehicle occupancy assumption results in *higher* high speed rail GHG emissions reductions than are likely.

APPENDIX B: SUPPLEMENTAL TABLES

Table B-1			
High Speed Rail Greenhouse Gas Emission Impacts: 2040: Static Forecasts			
Dynamic Forecasts			
OPERATIONS & MAINTENANCE	CHSRA	Adjusted CHSRA	International Experience
Automobile Travel	Unknown	(0.35)	(0.18)
Airline Travel	unknown	(0.31)	(0.15)
Trains: Indirect Power	unknown	0.35	0.17
Stations, Facilities & Maintenance of Way	unknown	0.07	0.03
Total	unknown	(0.25)	(0.12)
Static Forecasts			
OPERATIONS & MAINTENANCE	CHSRA	Adjusted CHSRA	International Experience
Automobile Travel	Unknown	-0.56	-0.28
Airline Travel	unknown	-0.44	-0.22
Trains: Indirect Power	unknown	0.35	0.17
Stations, Facilities & Maintenance of Way	unknown	0.07	0.03
Total	-1.54	-0.59	-0.29
In millions of tons			
Construction GHGs not considered due to lack of data.			
Sources: CHSRA & authors calculations			

Table B-2			
High Speed Rail 2040 Costs			
In Billions of 2013\$	CHSRA	Adjusted CHSRA	International Experience
Capital: Equivalent Annual Cost: Low	unknown	\$2.13	\$2.13
Capital: Equivalent Annual Cost: High	unknown	\$2.49	\$2.49
Automobile Cost	unknown	(\$0.83)	(\$0.41)
AirlineCost	unknown	(\$0.40)	(\$0.20)
High Speed Rail Operations & Maintenance	unknown	\$0.87	\$0.43
Total with Low Capital Cost	\$1.57	\$1.78	\$1.96
Total with High Capital Cost	\$1.93	\$2.14	\$2.31
In millions of tons			
Sources: CHSRA & authors calculations			

Paper 2

**Legality of Use
of
Cap-and-Trade
Auction Proceeds
to Fund High-Speed Rail**

**Attorneys Scott B. Birkey and
James M. Purvis**

Cox, Castle, Nicholson

Memorandum**Attorney-Client Privileged****Confidential – Common Interest Privilege**

To: Michael J. Brady

From: Scott B. Birkey
James M. Purvis

Date: February 18, 2014

File No: 062043

Re: Legality of Use of Cap-and-Trade Auction Proceeds to Fund High-Speed Rail

In his 2014-15 budget, the Governor proposes to allocate \$250 million of cap-and-trade auction proceeds to the California High-Speed Rail Authority (the “Authority”). You asked us to consider whether the use of such proceeds to fund high-speed rail would be legal. In short, we believe that an appropriation of cap-and-trade auction proceeds to fund high-speed rail would be vulnerable in a legal challenge because high-speed rail construction will in and of itself not further the goals of AB 32 – that is, to reduce greenhouse gas (“GHG”) emissions statewide to 1990 levels by 2020 – and therefore such appropriation would constitute the use of auction proceeds for an unrelated revenue purpose, which is prohibited under *Sinclair Paint Company v. State Board of Equalization*, 15 Cal.4th 866 (Cal. 1997).

1. **Background on Cap-and-Trade in California**

The Global Warming Solutions Act of 2006 (Chapter 488, Statutes of 2006, codified at Health & Saf. Code, §§ 38500 et seq.), commonly referred to as AB 32, did two important things: (1) it established the goal of reducing GHG emissions statewide to 1990 levels by 2020, *see* Health and Saf. Code, § 38550; and (2) it authorized the California Air Resources Board (“CARB”) to adopt regulations creating “market-based compliance mechanisms” to achieve that goal, *see id.* §§ 38562, 38570. Pursuant to such authority, CARB then adopted regulations that established California’s GHG emissions cap-and-trade program. *See* 17 Cal. Code Regs., §§ 95800 et seq.

In short, CARB’s regulations place a “cap” on aggregate GHG emissions from entities responsible for roughly 85% of California’s emissions. To implement the cap-and-trade program, CARB allocated a certain number of carbon allowances equal to the cap. Each allowance equals one ton of carbon dioxide equivalent. Under the cap-and-trade program,

CARB provides some allowances for free, while making others available for purchase at auctions. Once the allowances have been allocated, entities may then “trade” (i.e., buy and sell on the open market) the allowances in order to obtain enough to cover their total emissions for a given period of time.

To date, CARB has conducted five separate auctions since November 2012.¹ Cumulatively, these auctions have resulted in a total of \$532 million in state revenue, and future quarterly auctions are expected to raise additional revenue. By law, auction proceeds are placed into a special fund in the State Treasury – the Greenhouse Gas Reduction Fund – from which they are available for appropriation by the Legislature. *See* Gov. Code, § 16428.8. From there, the monies must be used “to facilitate the achievement of reductions of greenhouse gas emissions in [California] consistent with” AB 32.² Health & Saf. Code, § 39712.

2. **The Governor’s 2014-15 Proposed Budget**

The Governor’s 2014-15 budget proposes to allocate \$250 million of cap-and-trade auction revenues to the Authority, including \$58.6 million for Phase I project planning as well as \$191.4 million for construction and right-of-way acquisition for the first phase of the Initial Operating Section. *See* GOVERNOR’S BUDGET 2014-15, PROPOSED BUDGET SUMMARY, *available at* <http://www.ebudget.ca.gov/2014-15/BudgetSummary/BSS/BSS.html>.

3. **Use of Cap-and-Trade Auction Proceeds to Fund High-Speed Rail Will Not Further the Purposes of AB 32 and Therefore Will be Vulnerable in a Legal Challenge.**

The constitutionality of CARB’s cap-and-trade program has been raised in two separate lawsuits, *California Chamber of Commerce v. California Air Resources Board* (Case No. 34-2012-80001313, Sacramento Superior Court) and *Morning Star Packing Co. v. California Air Resources Board* (Case No. 34-2013-80001464, Sacramento Superior Court), respectively. If found to be unconstitutional, the cap-and-trade program would be undone in its entirety.³ Even assuming that cap-and-trade is found to be constitutional, however, cap-and-trade auction proceeds nevertheless may not be appropriated by the legislature for unrelated revenue purposes. And because the construction of high-speed rail would not further the purposes of AB 32, any such appropriation would be subject to legal challenge.

¹ A sixth auction will be held on February 19, 2014. *See* CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY, AIR RESOURCES BOARD, AUCTION INFORMATION, <http://www.arb.ca.gov/cc/capandtrade/auction/auction.htm> (last visited February 8, 2014).

² In addition to the auction revenues, AB 32 and the implementing regulations authorize CARB to collect a fee to recover the administrative costs of carrying out AB 32. *See* Health & Saf. Code, § 38597; 17 Cal. Code Regs., §§ 95200 et seq. Such fees are intended to collect an amount of funds necessary to recover CARB’s costs of implementing and enforcing AB 32 each fiscal year.

³ In fall of 2013 the Sacramento Superior Court upheld the constitutionality of the cap-and-trade program, finding that such program did not constitute an unconstitutional tax. *See* Joint Ruling on Submitted Matters, Case No. 34-2012-80001313 (Aug. 28, 2013). This issue now is pending on appeal.

a. **Cap-and-trade auction proceeds must be used to advance the goals of AB 32.**

If ultimately deemed constitutional, cap-and-trade necessarily would be found to constitute any one of three valid fees recognized in the case law: (1) special assessments that are based on the value of a benefit conferred on property; (2) development fees exacted in return for permits and other privileges; or (3) regulatory fees imposed under the State's police power. *See Sinclair Paint v. State Bd. of Equalization*, 15 Cal. 4th 866, 874 (Cal. 1997). Although cap-and-trade does not fit clearly into any one of these three respective types of fees, it most likely would be characterized as a regulatory fee.

Broadly, regulatory fees are not dependent on government-conferred benefits or privilege and are imposed under the police power. *Id.* at 875. Courts have found such fees valid so long as: (1) fee revenues are spent for purposes related to the regulatory activities for which those fees were assessed; and (2) the amount of fees assessed and paid does not exceed the reasonable cost of providing the protective services for which the fees are charged. *See Cal. Farm Bureau Fed'n v. State Water Res. Control Bd.*, 51 Cal.4th 421, 437-42 (Cal. 2011); *Cal. Bldg. Indus. Ass'n v. San Joaquin Valley Air Pollution Control Dist.*, 178 Cal.App.4th 120, 131-32 (Cal. Ct. App. 2009); *Sinclair Paint*, 15 Cal.4th at 876-80.

Notably, California courts have recognized that regulatory fees legally may be imposed as part of a broader regulatory scheme for which the fee payer does not receive any perceived "benefit." *See Pennell v. City of San Jose*, 42 Cal.3d 365, 375 (Cal. 1986). In *Sinclair Paint*, for example, the Supreme Court noted that the State may impose industry-wide "remediation" or "mitigation" fees intended to defray the actual or anticipated adverse effects of an industry's business operations. *See Sinclair Paint*, 15 Cal.4th at 877-78. "From the viewpoint of general police power authority," the *Sinclair Paint* court continued, "we see no reason why statutes or ordinances calling on polluters or producers of contaminating products to help in mitigation or cleanup efforts should be deemed less 'regulatory' in nature than the initial permit or licensing programs that allowed them to operate." *Id.* at 877. But the *Sinclair Paint* court also noted that such "remediation" or "mitigation" fee measures at the least have required a "causal connection" or "clear nexus" between the product and its identified adverse effects. *Id.* at 878, 881.

Based on the foregoing analysis, cap-and-trade auction proceeds must be used for purposes related to the regulatory activities for which those fees were assessed. And in line with such requirement, Health and Safety Code section 39712 plainly requires that auction proceeds be used "to facilitate the achievement of reductions of greenhouse gas emissions in [California] consistent with" AB 32. Thus, in order for cap-and-trade auction proceeds validly to be appropriated to a state agency, any such appropriation must be used to further the purposes of AB 32.

b. Use of cap-and-trade auction proceeds to fund high-speed rail will not further the purposes of AB 32.

Given the legal requirements, the Governor's proposal to fund high-speed rail from cap-and-trade auction proceeds legally is untenable. The primary purpose of AB 32, and the only purpose which is related to construction and ultimate operation of the high-speed rail system, is to reduce California's greenhouse gas emissions to 1990 levels by 2020. And there simply is no support for the conclusion that high-speed rail will help achieve AB 32's purpose of reducing GHG emissions to such levels.

As an initial matter, according to the Authority's Revised 2012 Business Plan, high-speed rail will not be operational until 2022 at the earliest.⁴ And by its own admissions, the Authority itself has recognized that "construction activities will generate GHG emissions."⁵ See CALIFORNIA HIGH-SPEED RAIL AUTHORITY, CONTRIBUTION OF THE HIGH-SPEED RAIL PROGRAM TO REDUCING CALIFORNIA'S GREENHOUSE GAS EMISSION LEVELS 9, 13-15 (2013). That is, even under the Authority's best estimates, high-speed rail will not help to reduce GHG emissions by 2020. Thus, even assuming that high-speed rail might eventually reduce GHG emissions in the long term, it would not help to achieve AB 32's primary goal of reducing greenhouse gas emissions to 1990 levels by 2020. On this basis alone, the use of cap-and-trade auction proceeds to fund high-speed rail will be vulnerable in a legal challenge. And on this basis as well, the Legislature's budget analyst similarly has concluded that the use of auction proceeds to fund high-speed rail legally is risky. LEGISLATIVE ANALYST'S OFFICE, THE 2012-13 BUDGET: FUNDING REQUESTS FOR HIGH-SPEED RAIL 7-8 (2012) (attached hereto as **Exhibit A**); LEGISLATIVE ANALYST'S OFFICE, THE 2014-15 BUDGET: OVERVIEW OF THE GOVERNOR'S BUDGET 37-38 (2014) ("Specifically, we are advised that [use of auction proceed revenues] is

⁴ The Authority's Draft 2014 Business Plan, which was released on February 7, 2014, maintains that operation will not begin prior to 2022. See CALIFORNIA HIGH-SPEED RAIL AUTHORITY, DRAFT 2014 BUSINESS PLAN 16 (2014).

⁵ While the Authority explicitly recognizes that construction of the project will generate greenhouse gas emissions, it nonetheless contends that it is "committed to achieving zero net GHG emissions related to construction activities" by use of various offset strategies. CALIFORNIA HIGH-SPEED RAIL AUTHORITY, CONTRIBUTION OF THE HIGH-SPEED RAIL PROGRAM TO REDUCING CALIFORNIA'S GREENHOUSE GAS EMISSION LEVELS 13 (2013). Thus, if appropriated to the Authority, cap-and-trade auction proceeds ironically might be utilized by the Authority not to reduce greenhouse gas emissions but as a way to offset its own construction-related GHG emissions. But even assuming that the Authority correctly asserts that construction ultimately will result in zero net greenhouse gas emissions, such a result merely will maintain the status quo, that is, *it will not contribute to AB 32's goal of actually reducing emissions to 1990 levels by 2020.*

Alternatively, in the event that offsets are not employed, researchers have studied high-speed rail's "payback" period (the point at which the GHG emissions reductions from the substitution of auto and air trips for high-speed rail trips equals the GHG emissions produced by the high-speed rail project) and concluded that GHG payback likely would not occur until 20 to 30 years after groundbreaking. See MIKHAIL CHESTER & ARPAD HORVATH, HIGH-SPEED RAIL WITH EMERGING AUTOMOBILES AND AIRCRAFT CAN REDUCE ENVIRONMENTAL IMPACTS IN CALIFORNIA'S FUTURE 9 (2012). Chester and Horvath note, however, that "payback is highly sensitive to reduced automobile travel," any therefore any slip in ridership from currently predicted levels would delay the expected payback period even further. *Id.*

subject to the so-called Sinclair nexus test. . . . Given this legal requirement, the administration's proposal to fund activities (such as high-speed rail) could be legally risky.") (attached hereto as **Exhibit B**).

Further, multiple studies suggest that, even if in the long-term high-speed rail will result in GHG emissions reductions, such reductions will be substantially lower than the Authority projects. At least one commenter, for example, has concluded that methodological faults in the Authority's emissions reductions estimates led to a 130 to 190 percent overestimation of GHG emissions reductions. *See* JOEL SCHWARTZ, BLUE SKY CONSULTING GROUP, COMMENTS SUBMITTED TO THE CALIFORNIA HIGH SPEED RAIL AUTHORITY ON THE REVISED DRAFT ENVIRONMENTAL IMPACT REPORT/SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE FRESNO-BAKERSFIELD SEGMENT OF THE CALIFORNIA HIGH SPEED TRAIN PROJECT (Oct. 16, 2012). And others have concluded that the Authority's ridership estimates are flawed, and that such flaws cast doubt on the Authority's GHG emissions reduction estimates. *See, e.g.,* DAVID BROWNSTONE, MARK HANSEN & SAMER MADANAT, REVIEW OF "BAY AREA/CALIFORNIA HIGH-SPEED RAIL RIDERSHIP AND REVENUE FORECASTING STUDY" (June 2010).

The more attenuated the relationship between each dollar spent from cap-and-trade and the GHG emissions reduction achieved, the more likely a court would be to find that the use of cap-and-trade auction proceeds to fund high-speed rail would be for an "unrelated revenue purpose," rather than to advance the purposes of AB 32. *See Sinclair Paint*, 15 Cal.4th at 878.

4. **In Any Event, Use of Cap-and-Trade Auction Proceeds to Fund High-Speed Rail is a Poor Investment Strategy and Therefore Inconsistent with State's Stated Intention of Spending Such Proceeds Well.**

Finally, we note that a number of commentators have questioned the wisdom of using cap-and-trade auction proceeds to fund high-speed rail as a poor investment strategy. And although not a legal requirement, the current Cap-and-Trade Auction Proceeds Investment Plan reflects the State's intention to spend cap-and-trade auction proceeds well. *See* STATE OF CALIFORNIA, CAP-AND-TRADE AUCTION PROCEEDS INVESTMENT PLAN: FISCAL YEARS 2013-14 THROUGH 2015-15 (May 14, 2013) ("The investment of the cap-and-trade auction proceeds brings both the opportunity and the responsibility to spend them well and to further the objectives of AB 32.").

Certainly as compared to a different mix of investments that could be made with cap-and-trade revenue, the Governor's proposal is unlikely to maximize GHG emissions reductions. For instance, even assuming that the Authority's estimates for the less costly 2008 proposed system are accurate, achieving GHG emissions by building the high-speed rail system could cost many times the \$20 to \$50 per ton that that United Nations Intergovernmental Panel on Climate Change has concluded would achieve sufficient GHG emissions reductions. *See* WENDELL COX & JOSEPH VRANICH, THE CALIFORNIA HIGH SPEED RAIL PROPOSAL: A DUE DILIGENCE REPORT

(2008); *see also* Terry Barker et al., *Mitigation from a Cross-Sectoral Perspective*, in CONTRIBUTION OF WORKING GROUP III TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (2007). Under such standard, use of cap-and-trade auction proceeds to achieve greenhouse gas reductions would be extremely cost-ineffective, and would divert these important funds from other uses that would constitute far better investment strategies. This policy perspective could help color legal arguments made against the use of cap-and-trade auction proceeds for high-speed rail.

EXHIBIT 'A'

EXHIBIT 'A'

environmental review for various sections of the project.

In addition, the Governor's January budget proposal includes \$17.9 million for state operations to fund the authority for 73 positions (including 19 new positions), contracts with other state departments, and external contracts for communications, program management, and financial consulting services.

BUSINESS PLAN AND BUDGET PROPOSALS RAISE CONCERNS

Based on our review of the 2012 business plan and the Governor's related budget proposals, we find that the HSRA has not provided sufficient detail and justification to the Legislature regarding its plan to build a high-speed rail system. Specifically, we find that (1) most of the funding for the project remains highly speculative, including the possible use of cap-and-trade revenues; and (2) important details regarding the very recent, significant changes in the scope and delivery of the project have not been sorted out.

Most of the Future Funding Remains Speculative

Future Funds Not Identified. The future sources of funding to complete Phase 1 Blended are highly speculative. Specifically, the funding approach outlined in the 2012 revised business

plan is no more certain than what was proposed in previous plans. For example, the recent plan assumes nearly \$42 billion, or 62 percent of the total expected cost, will be funded by the federal government. However, about \$39 billion of this amount has not been secured from the federal government. Given the federal government's current financial situation and the current focus in Washington on reducing federal spending, it is uncertain if any further funding for the high-speed rail program will become available. In other words, it remains uncertain at this time whether or not the state will receive the necessary funds to complete the project. The absence of an identified funding source at the federal level makes the state's receipt of additional funding unlikely, particularly in the near term. In addition, it is unclear how much, if any, other non-state funds (such as local funds, and funds from operations and development, or private capital) have been secured. In total, only \$11.5 billion (or about 17 percent) of the estimated funds needed to complete the project have been committed.

Use of Cap-and-Trade Auction Revenues Very Speculative. As discussed earlier, the plan proposes to use revenue from the state's quarterly cap-and-trade auctions, which are scheduled to begin in November of this year, to backstop any shortfall in anticipated funding from the federal government. These auctions involve the selling of carbon allowances as a way to regulate and limit the state's GHG

Figure 4

Central Valley Segment Divided Into Five Design-Build Contracts

Contract	Description	Length in Miles ^a	Cost Estimate (In Billions)	Estimated Date of Contract Award
1	North of Fresno through Fresno	26 to 37	\$1.5	December 2012
2	South Fresno to Hanford Aroma Road	28	0.8	September 2013
3	Hanford Aroma Road to Dresser Avenue	55	1.0	September 2013
4	Dresser Avenue to Allen Road	14	0.4	October 2013
5	Trackwork for the entire 130 mile segment	N/A	0.5	March 2017

^a Length of construction segments are approximate.

emissions in accordance with Chapter 488, Statutes of 2006 (AB 32, Núñez/Pavley). As we discussed in our recent brief, *The 2012-13 Budget: Cap-and-Trade Auction Revenues*, the use of cap-and-trade revenues are subject to legal constraints. Based on an opinion we received from Legislative Counsel, the revenues generated from the cap-and-trade auctions would constitute “mitigation fee” revenues. Therefore, in order for their use to be valid as mitigation fees, these revenues must be used to mitigate GHG emissions. Given these considerations, the administration’s proposal to possibly use cap-and-trade auction revenues for the construction of high-speed rail raises three primary concerns.

- ***Would Not Help Achieve AB 32’s Primary Goal.*** The primary goal of AB 32 is to reduce California’s GHG emissions statewide to 1990 levels by 2020. Under the revised draft business plan, the IOS would not be completed until 2021 and Phase 1 Blended would not be completed until 2028. Thus, while the high-speed rail project could eventually help reduce GHG emissions somewhat in the very long run, given the project’s timeline, it would not help achieve AB 32’s primary goal of reducing GHG emissions by 2020. As a result, there could be serious legal concerns regarding this potential use of cap-and-trade revenues. It would be important for the Legislature to seek the advice of Legislative Counsel and consider any potential legal risks.
- ***High-Speed Rail Would Initially Increase GHG Emissions for Many Years.*** As mentioned above, in order to be a valid use of cap-and-trade revenues, programs will need to reduce GHG emissions. While the HSRA has not conducted an analysis to

determine the impact that the high-speed rail system will have on GHG emissions in the state, an independent study found that—if the high-speed rail system met its ridership targets and renewable electricity commitments—construction and operation of the system would emit more GHG emissions than it would reduce for approximately the first 30 years. While high-speed rail could reduce GHG emissions in the very long run, given the previously mentioned legal constraints, the fact that it would initially be a net emitter of GHG emissions could raise legal risks.

- ***Other GHG Reduction Strategies Likely to Be More Cost Effective.*** As we discussed in our recent brief on cap-and-trade, in allocating auction revenues we recommend that the Legislature prioritize GHG mitigation programs that have the greatest potential return on investment in terms of emission reductions per dollar invested. Considering the cost of a high-speed rail system relative to other GHG reduction strategies (such as green building codes and energy efficiency standards), a thorough cost-benefit analysis of all possible strategies is likely to reveal that the state has a number of other more cost-effective options. In other words, rather than allocate billions of dollars in cap-and-trade auctions revenues for the construction of a new transportation system that would not reduce GHG emissions for many years, the state could make targeted investments in programs that are actually designed to reduce GHG emissions and would do so at a much faster rate and at a significantly lower cost.

EXHIBIT 'B'

EXHIBIT 'B'

Jail Construction

Governor Proposes an Additional \$500 Million for Jail Construction. Since 2007, the Legislature has approved two measures authorizing a total of \$1.7 billion in lease-revenue bonds to fund the construction and modification of county jails. Chapter 7, Statutes of 2007 (AB 900, Solorio), provided \$1.2 billion to help counties address jail overcrowding. Chapter 42, Statutes of 2012 (SB 1022, Committee on Budget and Fiscal Review), authorized an additional \$500 million to help counties construct and modify jails to accommodate longer-term inmates who have been shifted to county responsibility under the 2011 realignment of lower-level offenders. The Governor's budget for 2014-15 proposes that another \$500 million in lease-revenue bonds be authorized to support the construction of jail facilities. Under the proposal, counties would be subject to a 10 percent match requirement.

LAO Comments. The administration has not yet provided an analysis of county jail needs or other rationale for why the level of funding proposed is needed for jail projects or what criteria would be used to award the lease-revenue funding. For example, it is not clear whether funding would be awarded in a manner to alleviate crowding or to build additional facility space for programs, such as substance abuse treatment classes. Without such information, it will be difficult for the Legislature to assess whether the additional funding will be allocated in a manner that is cost effective and in line with state priorities.

Resources and Environmental Protection

Cap-and-Trade Expenditure Plan

Background. The Global Warming Solutions Act of 2006 (Chapter 488, Statutes of 2006 [AB 32, Núñez/Pavley]), commonly referred to as AB 32,

established the goal of reducing GHG emissions statewide to 1990 levels by 2020. In order to help achieve this goal, the California Air Resources Board (ARB) adopted a regulation that establishes a cap-and-trade program that places a "cap" on aggregate GHG emissions from entities responsible for roughly 85 percent of the state's GHG emissions. To implement the cap-and-trade program, ARB allocates a certain number of carbon allowances equal to the cap. Each allowance equals one ton of carbon dioxide equivalent. The ARB provides some allowances for free, while making others available for purchase at auctions. Once the allowances have been allocated, entities can then "trade" (buy and sell on the open market) the allowances in order to obtain enough to cover their total emissions for a given period of time.

To date, ARB has conducted five auctions since November of 2012, which have generated a total of \$532 million in state revenue. Future quarterly auctions are expected to raise additional revenue. The *2013-14 Budget Act* authorizes the Director of Finance to loan \$500 million in cap-and-trade auction revenue to the General Fund.

Governor's Proposal. The Governor's budget proposes to spend \$850 million from cap-and-trade auction revenue in 2014-15 on various activities such as energy efficiency projects, low-emission vehicle rebates, and the state's high-speed rail project. Figure 14 (see next page) provides a list of the proposed programs and funding levels. The Governor's budget also includes a partial repayment of \$100 million of the 2013-14 budget loan to the General Fund.

Proposal Unlikely to Maximize GHG Emission Reductions. In order to minimize the economic impact of cap-and-trade, it is important that auction revenues be invested in a way that maximizes GHG emission reductions. Maximizing emission reductions (specifically in the capped sectors) reduces competition for allowances,

thereby putting downward pressure on the price of allowances. This, in turn, reduces the overall cost for covered entities to comply with AB 32 and the potential negative economic impacts of the program on consumers, businesses, and ratepayers. It is, however, unclear to what extent the complement of activities proposed by the Governor maximizes GHG emission reductions. For example, a GHG emission analysis completed by the High Speed Rail Authority (HSRA) indicates that once the high-speed rail system is operational in 2022, it would contribute a relatively minor amount of GHG emission reductions to the state. Moreover, the construction of the project would actually produce additional emissions (though HSRA will try to offset these emissions). Despite these findings, roughly 30 percent of the funding in the Governor's proposal goes to the high-speed rail project. Compared to a different mix of investments that could be made with the cap-and-trade revenue, the Governor's proposal is unlikely to maximize GHG emission reductions. Therefore, the Legislature will need to consider the most effective use of the cap-and-trade auction revenue.

Certain Aspects of Proposal Could Be Legally Risky. The Legislature will also want to consider

the potential legal risks associated with some of the activities that the Governor proposes to fund with cap-and-trade auction revenue. Based on an opinion that we received from Legislative Counsel, the revenues generated from ARB's cap-and-trade auctions are considered "mitigation fee" revenues. Thus, the use of these revenues are subject to certain legal criteria. Specifically, we are advised that their use is subject to the so-called Sinclair nexus test. This test requires that a clear nexus must exist between an activity for which a mitigation fee is used and the adverse effects related to the activity on which that fee is levied. Given this legal requirement, the administration's proposal to fund activities (such as high-speed rail) could be legally risky. While the high-speed rail project could eventually help reduce GHG emissions somewhat in the very long run, it would not help achieve AB 32's primary goal of reducing GHG emissions by 2020.

Water Action Plan

Proposal. In October 2013, the administration released a draft Water Action Plan that intends to address multiple water challenges facing the state, including limited and uncertain water supplies,

Figure 14

Governor's 2014-15 Cap-and-Trade Expenditure Plan

(In Millions)

Department	Activity	Amount
High-Speed Rail Authority	Rail planning, land acquisition, and construction	\$250
Air Resources Board	Low-emission vehicle rebates	200
Strategic Growth Council	Transit oriented development grants	100
Community Services and Development	Low-Income Home Energy Assistance Program	80
Caltrans	Intercity rail grants	50
Forestry and Fire Protection	Fire prevention and urban forestry	50
Fish and Wildlife	Water Action Plan—wetlands restoration	30
CalRecycle	Waste diversion	30
General Services	Energy efficiency upgrades in state buildings	20
Food and Agriculture	Reducing agricultural waste	20
Water Resources	Water Action Plan—water use efficiency	20
Total		\$850

Paper 3

Analysis of the CHSRA's GHG Report

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Analysis of the CHSRA's GHG Report

On July 1, 2013, the California High-Speed Rail Authority released its *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels* (June 2013).¹ It is meant to fulfill the mandate contained in SB 1029 (the Legislature's authorization of HSR bonds for the Central Valley project) to provide "a report on the 'net impact of the high-speed rail program on the state's greenhouse gas emissions.'"² However, the report fails to quantify the project's emissions and emissions reductions, thereby making an evaluation of the program's net impact impossible.

The report is obviously intended to counter the Legislative Analyst's budget report³ of April 2012, which concluded that the HSR project would result in a net increase in GHG emissions for the first 30 years of operations. Knocking down that report would open the door to funding HSR with cap and trade revenues. Interestingly, the CHSRA report never mentioned the LAO report and pretended it didn't exist. Someone must have concluded they couldn't win an argument on the merits.

Rather than dispute the LAO report, the CHSRA report claims to "detail[] the projected net greenhouse gas (GHG) emissions associated with the construction and operation of the high-speed rail system."⁴ However, the report offers no details of those emissions. If numbers were developed during the preparation of the report, they weren't included in the publication. This is a politicized promotional piece and not a science-based document. It is simply not credible and not responsive to the legislative mandate.

Update: The Governor's Budget Proposal

The Governor proposed that \$250 million in 2014-15 cap and trade revenues go to HSRA. He further requested that 33% of all cap and trade revenues starting with 2015-16 be continuously appropriated to HSRA.⁵ These many billions of dollars, if not well-spent by the HSR project, could threaten the effectiveness of the entire cap and trade program. Careful scrutiny of the HSR project's net GHG benefits is warranted.

Methodology

A disclosure on p. 17 invalidates the entire report: "The timeframe and activities analyzed and discussed in this report were for CP1 [the first phase of the current Merced-Bakersfield project]. As the project moves forward, direct GHG emissions calculations will be carried out for each subsequent construction package." The construction impacts of CP1 cannot be meaningfully analyzed in relation to the operational emissions

reductions calculations, because the latter pertains to the Initial Operating Section (IOS), which is ten times its length. No HSR operations are planned for CP1.

This is critical, because the report is actually comparing the emissions benefits of the IOS to the emissions costs of the one-tenth-as-long CP1. Completing the IOS would require funding the \$26 billion extension to the LA Basin, as well as building CP2, CP3, CP4 and CP5 [the remainder of the Merced-Bakersfield project]. Obviously, the net project emissions are going to be very different when the emissions arising from \$26+ billion of construction are added in.

Evaluating the HSR program's net impacts requires either the operational emissions reductions of CP1 or the construction emissions of the IOS. This report offers neither.

Summary of Findings

The following six so-called Findings are mere restatements of vague intentions, with no identified funding to implement them:

- Commitment to 100% renewable energy during operations
- Zero net greenhouse gas emissions during construction
- Supportive transit and land use for greater cumulative benefits for the state
- Plans to plant thousands of new trees across the Central Valley
- Cleaner school buses and water pumps in Central Valley communities
- Agricultural conservation measures aimed at reducing Central Valley sprawl and preserving valuable agricultural land⁶

In addition, the report offers no evidence in support of the following two so-called Findings:

- Zero net greenhouse gas emissions during construction⁷

There is no evidence to support this claim. No numbers whatsoever are offered for GHG mitigation activities. This is a classic "aspirational goal" rather than a finding on a plan to achieve one.

- Significant contributions to the State's goals embodied in AB 32 and SB 375⁸

There is no evidence to support this claim.

Not only is there no evidence to support the following three so-called Findings, they are actively misleading, as they are entirely dependent on CHSRA receiving an additional \$26 billion to build out the IOS to the Los Angeles Basin. In addition, they will mislead non-technical readers because they appear to be findings on the project's net emissions impacts. Because they exclude the construction emissions of both CP1 and the IOS, they represent only one side of the emissions ledger.

- Greenhouse gas savings from the first year of operations increasing to over 1 million tons of CO₂ per year within 10 years⁹
- Result in net GHG emissions diversions that, conservatively, are the equivalent of the GHG emissions created from the electricity used in 22,440 houses, or removing 31,000 passenger vehicles from the road.¹⁰

- Using methodologies consistent with state practice, an estimated 4 to 8 million metric tons of CO₂ saved by 2030, as if the state turned off a coal fired power plant¹¹

As discussed below, this last assertion is also misleading because the 8 years of operations are being compared to roughly one year of such a power plant's emissions.

GHG Emissions Sources for High-Speed Rail System

The diagram on page 9 is the only rendition of emissions category totals in the report. Amazingly, there is no corresponding table. The diagram comes closer to identifying the net impact than anything else in the report. However, its use of graphic symbols instead of conventional chart bars makes it impossible to interpret quantitatively. It is unclear from the diagram (or its associated text) whether the symbols have any quantitative significance, and if they do, whether emissions totals are represented by the height or by the area of the symbols. This makes the diagram both useless and deceptive: it obscures more than it discloses. Given the central importance of this data, choosing this indecipherable diagram for its portrayal can only be interpreted as an act of bad faith.

Operational Emissions Reductions

This project has had a long history of challenges to the technical validity of the HSR ridership model and litigation about the hidden changes that were made to it that advantaged Pacheco ridership while penalizing Altamont ridership. Ridership is the key input to an analysis of operational emissions reductions. As will be discussed later, the GHG reduction benefits of the HSR project are very dependent on ridership. With the controversy surrounding the ridership projections, this net emissions analysis rests on a shaky foundation.

The most striking part of this section is the meaningless apples-and-oranges comparison between the annual emissions of a coal-fired power plant and the emissions reductions from 8 years of HSR operations.¹² This is an attempt to invite positive identification with HSR by creating a "Coal Bad--HSR Good" dualism, a classic technique of promotion.

Construction Emissions

While the report uses standard methods to calculate the direct emissions resulting from construction, it entirely leaves out the emissions resulting from the acquisition of construction materials, and offers a weak justification that these emissions shouldn't be counted against the project:

Regarding the construction materials, for some it is possible to calculate the impacts over the material's life-cycle, from extraction through processing, use onsite, and disposal, and express those impacts in GHG emissions terms. Those GHG emissions are usually the reporting responsibility of the manufacturer, and in terms of a project GHG emissions

inventory, happen "upstream" and outside the boundary of the project.

For example, cement manufacturers in California are subject to ARB's Mandatory Reporting and Cap-and-Trade Regulations. These regulations require cement manufacturers to report their GHG emissions annually to ARB. The emissions from cement manufacturing count towards the statewide GHG emissions "cap." The GHG emissions covered under the "cap" are required to be reduced through emission controls or a limited amount (eight percent) may be offset through the purchase of ARB certified offset credits.¹³

The problem is that these emissions from construction materials constitute a very significant part of the project's overall emissions, because of the huge amount of concrete called for in the plans. This amount is large enough to increase the cement manufacturing sector's statewide emissions, which makes the "count it upstream" approach entirely inappropriate when evaluating the project's net impacts.

Perhaps recognizing this, the next paragraph of the report acknowledges the appropriateness of including the emissions from construction materials in its analysis, yet withholds the data on the flimsy excuse that the data is not "precise" enough:

However, the Authority considers it important to disclose the GHG emissions that occur outside of the project associated with materials used during construction. **These have not yet been quantified, due to the limitations of available information at this stage of project delivery.** While it is understood that the rail infrastructure will consist, largely of aggregate, concrete, steel, rails, and ballast; the **precise** source and supplier of those materials is not yet known. Additionally, the **precise** quantities are not available, given the nature of the design-build procurement process... (emphasis added)¹⁴

This is a masterful exercise in appearing to be fair-minded while simultaneously holding back damaging information. It is obvious that in the course of putting the project out to bid, the Authority prepared estimates of construction material quantities. These estimates were the basis for the calculation of the direct construction emissions. The materials' emissions must be **huge** for the Authority to need to bury them with this kind of double-talk.

The Legislative Analyst's April 2012 report¹⁵ relied on a 2010 pioneering study by Chester and Horvath entitled *Life-cycle assessment of high-speed rail: the case of California*.¹⁶ The study's 2012 update produced data that enabled this calculation: Infrastructure construction and operations contribute between 40% and 51% of the

CHSRA project's GHG emissions per person per kilometer travelled. This figure rises to near 100% of the emissions for the scenario with 100% renewable power, and falls to 32% when the train's capacity is nearly doubled.¹⁷ The paper found "CAHSR infrastructure construction effects are dominated by concrete use. Approximately 67% of CAHSR infrastructure emissions are the result of cement production for concrete use..."¹⁸

This is the smoking gun: Construction materials (as well as infrastructure construction, if one doesn't assume the success of the zero net GHG emissions program¹⁹) make up a highly significant percentage of the project's overall GHG emissions. Leaving them out so compromises the net impact analysis as to render it worthless.

The Chester and Horvath study calculated the project's payback period, the point at which the emissions reductions from the substitution of auto and air trips (measured as Vehicle Kilometers Traveled, or VKT) with HSR trips equals the HSR project's GHG emissions, including its cumulative prior emissions:

The payback sensitivity reveals several important considerations for transportation planners and air quality policy makers. The cumulative plum-colored lines for the high, medium and low forecast figures show that the **GHG payback will likely occur between 20 and 30 yr (D3) after groundbreaking**, and acidification potential after 20–40 yr. **However, payback is highly sensitive to reduced automobile travel.** The 5.8 billion auto VKT displaced dominate emissions changes in the corridor and the effects from reduced air travel and CAHSR are small. The reduced auto impacts are significantly affected or dominated by life-cycle components, in particular, avoided vehicle manufacturing, vehicle maintenance and gasoline production. (emphasis added.)²⁰

Chester and Horvath are thus warning that any slip in ridership from currently predicted levels would delay the GHG benefits of HSR even further.

Double Counting

When evaluating statewide benefits, it is important that GHG emissions reductions calculations represent only the project's own properties. The model that was used, on the other hand, "also reflects the GHG emissions benefits of ARB's recent rulemakings including on-road diesel fleet rules, Pavley Clean Car Standards, and the Low Carbon Fuel standard."²¹ This means that the report's emissions reduction calculations overstate the benefits accruing to the HSR project.

Offset Activities

The only way the CHSRA's GHG Report is able to claim a net beneficial GHG impact is by buying offsets in the form of environmental mitigations, including construction mitigations,²² and farmland protection.²³ The strategy of the Cap and Trade program is

to purchase GHG-reducing offsets at the lowest cost per ton. There's something very odd about committing Cap and Trade funds to a project that increases GHGs, which then has to buy GHG-reducing offsets. It would be dramatically less expensive on a per-ton basis to fund the GHG-reducing projects directly. Buying these same offsets as part of a CHSRA project package is inherently far more expensive.

Conclusion

The report offers no numbers capable of serving as a basis for the conclusion that "the high-speed rail program will have a positive impact on reducing the state's greenhouse gas emissions."²⁴ Instead, that conclusion "'feels right' without regard to evidence, logic, intellectual examination, or facts"--the Wikipedia definition of Stephen Colbert's 'truthiness'.

Endorsements

The uncritical endorsements of the report by agency heads expose the depth of its politicization. It simply is not credible that sophisticated agency heads and their staffs failed to spot the profound flaws identified above. Brian Kelly, now Secretary of the State Transportation Agency, "reviewed and approve[s]" the report.²⁵ Mary Nichols, Chair of the Air Resources Board, "believe[s] the analysis is reasonable..."²⁶ Instead of the comprehensive overview expected of someone of her subject matter expertise, she offered only superficial comments on the emissions reductions from mobility choices, and avoided construction emissions and offsets entirely. These two endorsements make it obvious that the Governor ordered his people to "make HSR funding happen" no matter what.

¹ hsr.ca.gov/docs/programs/green_practices/HSR_Reducing_CA_GHG_Emissions_2013.pdf

² p. 13. (Unless otherwise noted, all references are to the report accessible at the URL above.)

³ Legislative Analyst's Office, *Funding Requests for High-Speed Rail*, April 17, 2012, p. 8

⁴ p. 13.

⁵ Legislative Analyst's Office, *Cap-and-Trade Auction Revenue Expenditure Plan*, February 2014, p. 5

⁶ p. 6.

⁷ *Id.*

⁸ *Id.*

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.*

¹² p. 11.

¹³ p. 14.

¹⁴ p. 14.

¹⁵ Legislative Analyst's Office, p. 8

¹⁶ Mikhail Chester and Arpad Horvath, *Life-cycle assessment of high-speed rail: the case of California*, Environmental Research Letters, January 2010.

¹⁷ Mikhail Chester and Arpad Horvath, *High-speed rail with emerging automobiles and aircraft can reduce environmental impacts in California's future*, Environmental Research Letters, July 2012, p. 5 [Interpolated from the chart data in Figure 1]

¹⁸ Chester and Horvath, 2012, p. 4.

¹⁹ pp. 13-15.

²⁰ Chester and Horvath, 2012, p. 9.

²¹ p. 19.

²² p. 13.

²³ p. 15.

²⁴ p. 20.

²⁵ p. 1.

²⁶ p. 5.

Paper 4

The History and Status Of The California High- Speed Rail Authority's Unlawful Funding Plan

Mark Powell

The History and Status of the California High-Speed Rail Authority's Unlawful Funding Plan

Prepared By: by Mark Robert Powell – March 2014

The History and Status of the California High-Speed Rail Authority's Unlawful Funding Plan

Summary:

This report, broken into five parts, traces the development of a funding plan for California's high-speed rail system from the inception of the Intercity High-Speed Rail Commission twenty-one years ago to the recent release of the California High-Speed Rail Authority's Draft 2014 Business Plan.

Part I briefly covers the development of California's former freeway plan, the statutorily required model for the development of a statewide high-speed rail network by 2020 and the means to fund its construction.

Part II details the Commission's, and later the Authority's, efforts to develop the required funding plan leading up to the Authority's 1999 decision to ignore the Commission's recommendation to secure a "base funding source" and instead pursue a "phased funding plan" that turned out to be no funding plan at all.

Part III gives the history of the delays in developing even a "phased funding" plan leading to both Governor Schwarzenegger's 2008 call for new legislation requiring a funding plan to assure that any state expenditures for the project would result in operational high-speed rail services and the legislation that ensued.

Part IV chronicles the escalating cost of the project and the Authority's attempts to circumvent the law requiring a funding plan, including attempts to scale down the project and make up for their funding shortfall with the promise of Cap and Trade funds.

Part V discusses the 2005 Statewide High-Speed Rail Program EIR/EIS that looked out to the year 2020 weighing the environmental impacts and benefits of a completed statewide high-speed rail network against a "No Project Alternative" and a "Modal Alternative" (increased funding for roads and airports) and found in favor of high-speed rail. With the Authority's own plans now silent on the date for completing the statewide system because it has no funds, with not even the smallest useable segment of high-speed rail scheduled for completion until well after 2020, and given that the funding plan for even that small segment has been found deficient by a Superior Court Judge, the paper suggest it may be time to halt the project entirely and conduct a new Statewide Program EIR/EIS reflecting the realities of 2014.

Notes Regarding the Format of this Paper:

Footnotes only cite links to on-line documents the first time the document is cited.

Previously cited footnotes are shown in brackets. For example [FN81] denotes previously cited footnote 81.

Italics are used for document titles and for quoted wording from California statutes.

About the Author:

Mark Robert Powell earned a Bachelor of Science in Chemical Engineering with Distinction from the University of Minnesota, class of 1976. Mark worked briefly in the computer industry programing and interfacing mini-computers to control complex chemical processes before moving to California to work for the Union Oil Company (Unocal) in their Chemical Division. Mark eventually became responsible for all of Unocal's chemical plants and shipping terminals in California, Oregon, and Washington overseeing the activities of 300 employees and an annual budget of \$100 million before taking a position as Manager of Strategic Planning. He chose to leave Unocal during a period of downsizing prior to the company's acquisition by Chevron Corporation to pursue a career teaching chemistry and physics. Most of his teaching career was spent teaching Advanced Placement and International Baccalaureate Physics students at a private high school in Orange County. In retirement Mark began to study and write about the failings of California's high-speed rail project on his blog, Against California High Speed Rail, eventually leading to his research work for attorneys litigating the Case of John Tos, Aaron Fukuda, and the County of Kings versus California High-Speed Rail Authority, et al.

Part I

The Authority's Mandate - A Plan Similar to California's Former Freeway Plan

The California High Speed Rail Authority ("Authority") was chartered in 1996¹. Like its predecessor, the Intercity High Speed Rail Commission ("Commission") chartered in 1993², it was tasked with "*preparation of a high-speed intercity rail plan similar to California's former freeway plan and designate an entity with stable and predictable funding sources to implement the plan.*" This mandate is still found in the California Public Utilities Code.³ A review of "California's former freeway plan" is worthwhile because the rail and freeway plans were to be "similar".

California's Former Freeway Plan

In 1957, shortly after the passage in 1956 of the Federal-Aid Highway Act (establishing a federal excise tax on motor fuels to help fund the Interstate Highway System), California Senate Concurrent Resolution (SRC) No. 26 – *Relative to an over-all state-wide plan of freeways and expressways for the State of California* was approved and filed with the Secretary of State on January 25, 1957. SCR 26 foresaw a need for "*the establishment of a plan for such a state-wide system of freeways and expressways*" so that "*fiscal arrangements may be worked out and properly coordinated*".⁴ The Department of Public Works was to issue the plan.⁵ The plan, entitled *The California Freeway System*, was issued on September 2, 1958 laying out 12,250 miles of freeways to be completed by 1980.⁶ The roughly 20-year plan incorporated 2100 miles of freeways, built to Interstate Highway standards, as part of the Federal-Aid Highway Act of 1956.⁷

The "planning year" 1980 was chosen because "reasonable estimates of population, land use, and vehicular travel could be projected only so far into the future".⁸ The Department of Public Works concluded their report by stating that the system outlined "is economically feasible and can be accomplished within the framework of present highway user finances within a reasonable period of years."⁹ The *California Freeway and Expressway System Act*, codifying the

¹ Senate Bill 1420 (Kopp), Approved by Governor on September 22, 1996 and filed with Secretary of State September 24, 1996, Section 185010(h). See http://www.leginfo.ca.gov/pub/95-96/bill/sen/sb_1401-1450/sb_1420_bill_960924_chaptered.pdf

² Senate Concurrent Resolution 6 (Kopp), Filed with Secretary of State July 20, 1993, Whereas section, paragraph 8. See http://www.leginfo.ca.gov/pub/93-94/bill/sen/sb_0001-0050/scr_6_bill_930720_chaptered

³ . California Public Utilities Code, Division 19.5, Chapter 1, Section 185010(h). See <http://www.leginfo.ca.gov/cgi-bin/displaycode?section=puc&group=184001-185000&file=185000-185012>

⁴ Senate Concurrent Resolution No. 26, Filed with Secretary of State January 25, 1957. Whereas Section, paragraph (e)

⁵ Senate Concurrent Resolution No. 26, Filed with Secretary of State January 25, 1957. Resolved Section, paragraph (a)

⁶ The California Freeway System, published September 2, 1958, page 25, The Freeway System, paragraph 1, Document available at UC Irvine Langson Library, Irvine CA

⁷ The California Freeway System, published September 2, 1958, page 5, Introduction, paragraph 6

⁸ The California Freeway System, published September 2, 1958, page 18, Study Methods and System Criteria, subsection Planning Period, paragraph 1

⁹ The California Freeway System, published September 2, 1958, page 32, Conclusion

recommendations of the Department of Public Works, was enacted by Legislature and signed by Governor Pat Brown on June 19, 1959.¹⁰

Each year Annual Reports by the Division of Highways, Department of Public Works, discussed the funding plan; informing the public of progress being made to implement the plan and the sources and distribution of the public's funds. Quoting from the December 1962 Annual Report:¹¹

“Highway Financing

Sound programing depends upon sound financing.

With a known number of registered vehicles, it is fairly easy to predict revenues from taxable gasoline and diesel fuel consumption, drivers' licensing and registration fees, weight fees on commercial vehicles, and taxes on for-hire trucking.

The State Constitution requires that all such highway-user funds be spent for road construction and maintenance and for the administration of the Division of Highways, Department of Motor Vehicles, and Highway Patrol. They may not be diverted for other purposes.

The largest source of funds is the six-cents-per-gallon state gasoline tax. Four cents are spent on the construction and maintenance of state highways, 1 3/8 cents on county roads and 5/8 cent on city streets.

The cities' share is distributed by the Division of Highways on a population basis, and the counties' share is distributed directly to the counties by the State Controller.

Approximately one-third of these street, road, and highway funds represent moneys returned to the State from taxes imposed on the highway user by the federal government. This money is spent on the interstate routes (matched 9 percent by state funds) and on the federal-aid primary, secondary, and urban highways (matched 42 percent by the State from user taxes).”

The Annual Reports also reported budgeted total sources and distributions in percent by source and in total dollars. The following table is combined for comparative purposes from the December 1961 and 1962 Annual Reports.

¹⁰ Statutes of California - 1958-1959, Chapter 1062.

¹¹ 16th Annual Report of the Division of Highways, Department of Public Works, December 4, 1962, page 9, Highway Financing, paragraphs 1-6.

Highway User Taxes Including Federal Aid

Source	FY 1962-1963¹²	FY 1963-1964¹³
Gas Tax	43%	42%
Motor Vehicle Fees	18%	18%
Use Fuel Tax (Diesel)	3%	3%
Transportation Tax	2%	2%
Federal Aid – Interstate (9% state match)	27%	28%
Federal Aid – Regular (42% state match)	7%	7%
Total Percent	100%	100%
 Total Dollars	 \$658,370,017¹⁴	 \$695,927,042¹⁵

It is clear that California’s freeway plan did have “*stable and predictable funding sources to implement the plan.*” The California High-Speed Rail Authority, because of missed opportunities and what might be called “wishful thinking”, never developed its required funding plan.

¹² 15th Annual Report of the Division of Highways, Department of Public Works, December 7, 1961, page 8, Table of Sources and Distributions. Document available at UC Irvine, Langson Library, Irvine CA.

¹³ 16th Annual Report of the Division of Highways, Department of Public Works, December 4, 1962, page 10, Table of Sources and Distributions. Document available at UC Irvine, Langson Library, Irvine CA.

¹⁴ 15th Annual Report of the Division of Highways, Department of Public Works, December 7, 1961, page 10, Highway Financing. Document available at UC Irvine, Langson Library, Irvine CA.

¹⁵ 16th Annual Report of the Division of Highways, Department of Public Works, December 4, 1962, page 9, Highway Financing. Document available at UC Irvine, Langson Library, Irvine CA.

Part II

Early Attempts at a Realistic High-Speed Rail Funding Plan

Twenty-one years ago Senate Concurrent Resolution 6 (Kopp) spurred the creation of the Intercity High-Speed Rail Commission when adopted by both the Assembly and Senate, and filed with the Secretary of State on July 20, 1993. It cited the need for “*the preparation of a 20-year high-speed intercity rail plan similar to California’s former freeway plan*” and “*an entity with stable and predictable funding sources to implement the plan*”.¹⁶ The California Legislature asked the Commission to prepare a financing plan that would include, but not be limited to, private funds, state general obligation bonds, revenue bonds backed by incremental increases in the gasoline tax, airport funds, and potential alternative public funding sources.¹⁷

Progress Made by the Intercity High-Speed Rail Commission – 1993 to 1996

The nine members of the Commission with backgrounds in construction, finance, banking, law, engineering, railroads, and some experience in the public sector¹⁸ completed five technical studies and a Public Participation Program¹⁹ in addition to a report summarizing the Commission’s work; *The High-Speed Rail Summary Report and Action Plan*, released December 13, 1996. The Commission recommended a network of high-speed rail similar to the one presented to the voters nearly 12 years later; a segment linking the centers of San Francisco and Los Angeles, mostly following State Highway 99 through the Central Valley before swinging southeast to run through Palmdale and with additional segments connecting to Sacramento and San Diego. It was estimated to cost between \$12.1 and \$16.5 billion for the San Francisco to Los Angeles segment and between \$19.8 and \$24.6 billion (in 1996 dollars) for the entire statewide system.²⁰

The Commission sought to establish a “base funding source” that could reliably furnish 70-85%²¹ of the capital required for construction. Quoting from the Summary Report:

“In order to qualify as a base funding source, the source must be able to substantially finance the construction of the system, secure debt against the revenue source, and provide funding irrespective of the construction status or

¹⁶ Senate Concurrent Resolution 6, Filed with Secretary of State July 20, 1993, Whereas Section, paragraph 9. See http://www.leginfo.ca.gov/pub/93-94/bill/sen/sb_0001-0050/scr_6_bill_930720_chaptered

¹⁷ Senate Concurrent Resolution 6, Filed with Secretary of State July 20, 1993, Resolved Section, paragraph 13, items 1-5

¹⁸ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Appendix B, Document available at Claremont Colleges, Honnold/Mudd Library, Claremont, CA.

¹⁹ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Executive Summary, page 1

²⁰ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Capital Cost Summary Tables, pages 3-25 and 3-27

²¹ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Major Secondary and Supplemental Funding Sources, pages 5-7 to 5-10, Secondary Funding Sources expected to each contribute less than 2% to the construction costs and Supplemental Funding Sources each expected to contribute less than 1% to the construction costs, the total was expected to close the funding gap left by the base or “primary funding source”.

operational readiness of the system. In addition, the source must have a stable and reliable revenue growth potential.”²²

After analyzing sales taxes, gas taxes, airport taxes, highway tolls, federal funding, and state funding, the Commission found that only a 5 cent increase in the state’s gasoline tax, or a ¼% increase in the state sales tax levied statewide, or a ½% increase in the state sales tax levied only in counties served by high speed rail met the Commission’s criteria to “provide a realistic means of funding the project”.²³ Of these options, the Commission seemed to favor a sales tax because of their concern over Section 1(b) of Article 19 of the California Constitution limiting the purposes for which gasoline taxes may be used.²⁴ However, the Commission left it up to the incoming California High-Speed Rail Authority to make the final decision.

Private funding was not considered a possibility because of the project’s risk, but was thought of as a way to finance extensions to Sacramento and San Diego once the San Francisco to Los Angeles portion was shown to be profitable.²⁵ In other words, future profits of an operating line could be sold to investors in return for a portion of the capital needed to construct the extensions. Also, the Commission recognized that federal high-speed rail programs amounted to only \$15 to \$25 million per year under the then-current authorizations that were scheduled to end in 1997 and therefore could not be considered a significant or predictable funding source.²⁶

With no private or federal support for the initial Los Angeles to San Francisco route, the Commission recognized an obvious fact; if Californians wanted a high-speed rail system, they would have to pay for it themselves. To implement the system, the Commission’s first recommendation was that the Authority secure the statutory authority and the base funding source for the system. Quoting from the Commission’s 1996 report: “There can be no significant progress on high-speed rail implementation nor can a private partner be selected until the voters have approved a source of base funding.”²⁷

²² *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Overview of Funding Sources, page 5-2

²³ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Base Funding Options, page 5-3

²⁴ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Base Funding Options, page 5-5

²⁵ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Financing the System – Introduction, page 5-1

²⁶ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Base Funding Options, page 5-6

²⁷ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Executive Summary, page ES-16

The California High-Speed Rail Authority – 1997 to 1999

Senate Bill 1420 (Kopp) created the High-Speed Rail Authority and stated that *“the Authority shall prepare a plan for the construction and operation of a high-speed train network for the state, consistent with and continuing the work of the Intercity High-Speed Rail Commission conducted prior to January 1, 1997.”*²⁸ Repeating verbatim words found in Senate Concurrent Resolution 6, except for the plurality of the word “sources”, SB1420 framed the mandate for the newly formed Authority: *“In order for the state to have a comprehensive network of high-speed intercity rail systems by the year 2020, it must begin preparation of a high-speed intercity rail plan similar to California’s former freeway plan and designate an entity **with stable and predictable funding sources to implement the plan.**”* (Emphasis added).²⁹

Beginning in 1997 and continuing through 1999 the Authority, using many of the same contractors used by Commission, repeated the Commission’s work and came to largely the same conclusions. In December 1999 the Authority released its 2000 Business Plan, showing capital costs of \$25 billion (in 1999 dollars) for the entire statewide system.³⁰ The plan also laid out a sixteen-year project development (6 years) and construction (10 years) schedule for the statewide system.³¹ It contemplated “specific revenue-producing segments could be completed and opened earlier in the implementation schedule. For example, the core segment from Los Angeles to San Francisco could potentially be completed at the end of the seventh year (of the 10 year construction period) with completion of the remaining segments to follow.”³²

With regard to funding the system, the Authority’s 2000 Business Plan presented two funding approaches; a “full funding scenario” based on a temporary sales tax and postulated on a decision to proceed with the statewide system in the year 2000, and a “phased funding approach” that promised to secure resources as necessary to “complete discrete phases of the project as expeditiously as possible.”³³ The 2000 Business Plan also states that in March 1999 “the Authority adopted policies that served as assumptions to guide the development of both funding strategies.” Board Meeting minutes and supporting documents from March 1999 are missing from the Authority’s website. However, the 2000 Business Plan does refer to policies adopted by the Authority in March 1999 and itemizes these clearly in the plan.³⁴ Pertinent items from the plan are:

²⁸ Senate Bill 1420 (Kopp), Section 185032. See: http://www.leginfo.ca.gov/pub/95-96/bill/sen/sb_1401-1450/sb_1420_bill_960924_chaptered.pdf

²⁹ Senate Bill 1420 (Kopp), Section 185010(h). See: <http://www.leginfo.ca.gov/cgi-bin/displaycode?section=puc&group=184001-185000&file=185000-185012>

³⁰ 2000 Business Plan, Section 2.3, Table 2.1, Capital Cost by Segment. See 2000 Business Plan http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2000_FullRpt.pdf

³¹ 2000 Business Plan, Section 2.2, Figure 2.3, Implementation and Construction Schedule

³² 2000 Business Plan, Section 2.2, Phase 3: Final Design and Construction

³³ 2000 Business Plan, Section 6.1, Two Funding Approaches, paragraph 1.

³⁴ 2000 Business Plan, Section 6.2, Financial Plan Policies

“The financial plan shall be prepared with a statewide temporary sales tax as the state revenue source, to the extent that state public funds are needed for the capital costs of building the high-speed train network, and only for so long as they are needed.”

“The financial plan shall presume that the state will fund the base system fully and that no local funding participation shall be assumed in the base system.”

“The Authority shall diligently seek partnership funding from the federal government to construct the high-speed train system. **However, federal grant funding shall not be included in the Authority’s financial plan until a funding commitment is expressed by either the Congress or the administration.** To the extent possible, advisable, and cost effective, the Authority should seek federal loans or credit enhancements.” (Emphasis added)

With the December 1999 deadline for release of the 2000 Business Plan approaching, the Authority was forced to select a preferred funding strategy. Drafts of the plan’s Executive Summary, which included a section on funding to be voted on during the November 17, 1999 board meeting, began to circulate. In his November 9th draft of the Executive Summary, addressed to Board members Leonard and Bates, Executive Director Mehdi Morshed writes: “While the Authority has sufficient information and analyses to conclude that a high-speed train is a smart investment and should proceed, we do not believe asking the people of California to make a full-funding commitment for the project is a prudent course of action at this time for the following reasons.” The Executive Director’s reasons included; 1) necessary environmental work to define with more specificity the corridors, station locations, and cost of the system, and 2) two years of substantive discussions with the private sector and the federal government “which will likely reduce the investment the people of California will need to make in the system”.³⁵ In Director Morshed’s revised draft, written for the entire Board on November 15th, the last words of the prior draft were rewritten as “which will likely produce major reductions in the investment the people of California will need to make in the system.”³⁶

Resolution HSRA 99-8 *Motions on Recommendations to the Authority to Become Part of the Business Plan* detailing a preferred funding strategy was brought up at the November 17th Board Meeting and approved unanimously (9-0).³⁷ The motion “recommended to the Governor and the Legislature that California not proceed to fund the project fully in 2000, either through legislative action or by placing a full-funding proposal on the November 2000 ballot for the

³⁵ Memorandum from Executive Director Mehdi Morshed to Bill Leonard and Dr. Ernest Bates (Board Members), Subject: Conclusions and Recommendations, dated November 9, 1999, Executive Summary attachment, page 5. Located in California State Archives and not found on the Authority’s website.

³⁶ Memorandum from Executive Director Mehdi Morshed to Chairman and Authority Board Members, Subject: Draft Business Plan, dated November 15, 1999, Executive Summary attachment, page 5. Located in California State Archives and not found on the Authority’s website.

³⁷ FAX from Executive Director Mehdi Morshed to Congressman Jim Costa, Resolution HSRA 99-8 *Motion on Recommendations to the Authority to Become Part of the Business Plan*. Located in California State Archives and not found on the Authority’s website.

voters to decide.” It did recommend an expenditure of \$25 million over two years for further program level environmental work. If the system still proved viable, it recommended spending \$350 million over the subsequent three to four years to achieve full environmental clearance. In addition, it called for “an aggressive statewide effort to increase federal funding for both conventional and high-speed trains in California.”

Wording regarding potential savings to Californians did appear in the 2000 Business Plan Cover Letter. The Letter speculated that “greater private sector funding, coupled with federal funding, would decrease greatly the amount Californians would need to invest, perhaps to only about one-third of the total project cost”.³⁸ Such speculation also made its way into the plan’s Executive Summary which said, “it is reasonable to anticipate that the federal government would become a financial partner in this project, reducing the capital needs to be borne by the California taxpayer.”³⁹

Both funding strategies made it into the 2000 Business Plan, but only the recommended strategy, the “phased funding plan,” has been followed by the Authority since 2000. Stating that Californians would perhaps need to pay for “only about one-third of the total project cost”, although totally unsupported in the plan, fit well with subsequent legislation scheduling a vote on issuance of \$9 billion in high-speed rail bonds in November 2004.⁴⁰ The Authority’s hoped-for significant private funds or grants from non-existent federal programs to create a “phased-funding plan” ignored the Authority’s mandate still found in Section 185010 of the Public Utilities Code, which reads as follows:

“185010(h) In order for the state to have a comprehensive network of high-speed intercity rail systems by the year 2020, it must begin preparation of a high-speed intercity rail plan similar to California’s former freeway plan and designate an entity with stable and predictable funding sources to implement the plan.”

Leery of levying more taxes on Californians, Governor Gray Davis never supported a sales tax that could have created a stable and predictable funding source to pay for high-speed rail. Instead, he would support the “car tax” to help solve the state’s fiscal woes and be recalled from office in 2003.

³⁸ 2000 Business Plan Cover Letter addressed to Governor Gray Davis and Members of the California Legislature, page 1, final paragraph. See http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2000_FullRpt.pdf

³⁹ 2000 Business Plan Executive Summary, Options and Recommendations section, page 3

⁴⁰ Senate Bill 1856 (Costa), Safe Reliable High-Speed Passenger Train Bond Act, Division 3 of Streets and Highway Code, Chapter 20, Article 3, SEC. 4(a) See: http://www.leginfo.ca.gov/pub/01-02/bill/sen/sb_1851-1900/sb_1856_bill_20020919_chaptered.pdf

Part III

A Funding Plan That Never Materialized

Delayed a Funding Plan – 2000 to 2008

In the wake of the 2000 Business Plan's recommendation to pursue a "phased funding plan" and sunset provisions in existing law calling for termination of the Authority on June 30, 2001 unless a specified financial plan was approved by the Legislature or the voters prior to that date, AB1703 *High-speed rail service* (Florez) was enacted into law on September 28, 2000 extending the termination date of the Authority until December 31, 2003 and modifying section 185032 of the Public Utilities Code regarding plan submission⁴¹.

With still no funding plan in sight, SB796 *High-Speed Rail Authority* (Costa) was enacted into law on September 19, 2002 eliminating the termination date of the Authority and obsolete provisions of existing law relating to submission of a plan to voters by 1998 or 2000. It instead authorized the Authority to submit financial plans to the Governor and to the Legislature.⁴² On that same day, SB1856 *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century* (Costa) became law. It called for the issuance of \$9.95 billion in state general obligation bonds to be submitted to the voters on November 2, 2004. Section 1 of SB1856 called for initially linking San Francisco and the Bay Area to Los Angeles to serve as "*the backbone*" of the statewide system and speculated that it could be in "*limited operation by 2008.*" The bond funds were "*intended to encourage the federal government and private sector to make a significant contribution towards construction of the high-speed train network.*"⁴³

Two year later, now with Governor Schwarzenegger having replaced the recalled Gray Davis, but with still no commitments of federal or private funds to construct a high-speed rail project, SB1169 *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century* (Murray) was signed into law on June 24, 2004 pushing out the voter approval of rail bonds to November 7, 2006⁴⁴. Two years later, and again with no commitments of federal or private funds, AB713 *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century* (Torrico) was signed into law on June 27, 2006 pushing out the voter approval of rail bonds to November 4, 2008⁴⁵.

⁴¹ Assembly Bill 1703 (Florez) *High-speed rail service*; Legislative Council's Digest, section (1), paragraph 2; Public Utilities Code Section 185020(h); Public Utilities Code Section 185032(a)(1). See:

http://www.leginfo.ca.gov/pub/99-00/bill/asm/ab_1701-1750/ab_1703_bill_20000928_chaptered.pdf

⁴² Senate Bill 796 (Costa) *High-Speed Rail Authority*; Public Utilities Code Section 185034(8) and (9).

See: http://www.leginfo.ca.gov/pub/01-02/bill/sen/sb_0751-0800/sb_796_bill_20020919_chaptered.pdf

⁴³ Senate Bill 1856 (Costa), the *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century*; Section 1 paragraphs (b), (c), and (d). See: http://www.leginfo.ca.gov/pub/01-02/bill/sen/sb_1851-1900/sb_1856_bill_20020919_chaptered.pdf

⁴⁴ Senate Bill 1169 (Murray) the *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century*; SEC 5 http://www.leginfo.ca.gov/pub/03-04/bill/sen/sb_1151-1200/sb_1169_bill_20040624_chaptered.pdf

⁴⁵ Assembly Bill 713 the *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century*; SEC 4 http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0701-0750/ab_713_bill_20060627_chaptered.pdf

Governor Schwarzenegger's Qualified Support for Rail Bonds

Costa's original bond measure of 2002, and the two subsequent measures extending the vote on the bonds, spoke very little about funding plan requirements as a precursor to the issuance of the bonds. In fact, the words "funding plan" or "financial plan" do not appear anywhere in these pieces of legislation. The requirements for a "*rail plan similar to California's former freeway plan*" ...*with stable and predictable funding sources to implement the plan*" (still found in Section 185010(h) of the Public Utilities Code today) were written into the enabling legislation for the Commission and for the Authority, not the bond legislation of 2002, 2004, or 2006.

Governor Schwarzenegger's budget for 2008-2009, released in January 2008 called for: "Modifications to the Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century, currently scheduled for the November 2008 ballot (\$10 Billion) to ensure that appropriate financing is available to begin building the project."⁴⁶

The requirements of the funding plan were further clarified in the Governor's 2008-2009 Budget Revisions, released in May 2008. The Revised Budget language included the following passages:

"The administration will be proposing amendments to the *Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century* to ensure an appropriate balance between **assuring that expenditures of the bond funds will result in operational high-speed rail services** and providing the flexibility needed to attract federal and local government, as well as private sector, participation in funding, constructing, and operating the system. The following changes to the bond legislation are being proposed (Emphasis added).

Limit the amount of bond funding that may be used for engineering work, environmental studies needed to obtain permits, and preservation of right-of-way to enable project costs to be more accurately determined and project risk to be reduced before other parties' funds are fully committed. This will help pave the way for public and private partners to participate in the project, while limiting the amount of bond funds at risk.

Before any construction or equipment purchase contracts can be signed for a portion of the system, there must be a complete funding plan that provides assurance that all funding needed to provide service on that portion of the system is secured. (Emphasis added)⁴⁷

⁴⁶ January 2008 Budget Highlights, Strategic Growth Plan section, page 29. See: <http://www.dof.ca.gov/budget/historical/2008-09/governors/highlights/documents/HINF.pdf>

⁴⁷ Governor's May Budget Revision 2008-09, Business Transportation and Housing section, pages 27-28. See: http://www.dof.ca.gov/budget/historical/2008-09/may_revision/documents/BS-BTH.pdf

Taken in context with reference to “operational high-speed rail services” the word “service” must be taken as a reference to operational high-speed rail service. Clearly the Governor’s support for the high-speed train project was contingent on assurances that the Authority would have secured funds to complete a useable segment of the high-speed rail project before committing funds to begin construction or to purchase equipment.

Requirements of a Funding Plan and Other Tax Payer Protections – Assembly Bill 3034

In response the Governor’s January 2008 request for modifications to the existing rail bond act “to ensure that appropriate financing is available to begin building the project”, Assembly Member Cathleen Galgiani introduced AB3034, *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century*, on February 22, 2008. In what amounted to revisions of Costa’s original 2002 bill, Galgiani’s bill was amended as it progressed through the Assembly and then the Senate. Revisions dealing with construction of the high-speed train system and its funding are discussed in this section.

The Assembly’s Revisions:

AB3034, as Introduced in Assembly February 22, 2008⁴⁸ (Authors/Coauthors/Sponsors – 4)

2704.04(c)– Deleted the requirement that a segment from San Francisco Transbay Terminal to Los Angeles Union Station (SF-LA) be “*fully funded*” before allowing bond funds to be spent on other segments and then revised other listed segments to incorporate pieces of the SF-LA segment.

2704.08(c) – Inserted requirement stating that “*in selecting each specific segment for construction and prior to awarding a construction contract, the authority shall have a detailed funding plan for that segment that identifies the full cost of constructing the segment and the sources of all revenues needed to complete construction of the segment*”

2704.08(d) – Inserted a requirement that in prioritizing segments the Authority “*shall give priority to those segments that require the least amount of bond funds as a percentage of total cost of construction, shall consider the utility of that segment for other passenger rail services, and shall ensure that any other passenger service provided on that segment will not result in any operating or maintenance cost to the authority.*”

The reference to a “*funding plan*” is made only once in Galgiani’s original bill, but that is once more than in Costa’s original bill. Also, the reference to prioritizing segments based on “*the utility of that segment for other passenger rail services*” may later have been cited by the Authority as justification for building an Initial Construction Segment that could be used by

⁴⁸ AB 3034, as Introduced in Assembly February 22, 2008. See:
http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080222_introduced.pdf

Amtrak. As will be discussed later in more detail, the Authority had previously adopted their May 2007 Phasing Plan outlining possible early use of some segments by Metrolink (LAUS to Palmdale) and potential cost sharing with both Metrolink and Caltrain. The Authority's Executive Director, Medhi Morshed, speaking of this possibility before the Assembly Select Committee on Rail Transportation on April 3, 2008, said:

“We did a Phase 1 work which is out of the 800 miles where do we build first and the most promising place to build the Phase 1 would be between San Francisco and Anaheim. That's where you begin with close to about a \$1 billion per year surplus. And within that over a ten year period we are going to build that in segments and we are going to look at segments that are going to get some initial benefits. And that looks like most likely it is going to be San Francisco to San Jose segment which we can actually make improvements in conjunction with the CalTrain people and they can begin to use the system while we are building it, a similar situation exists between Los Angeles and Anaheim, and probably Los Angeles and Palmdale”⁴⁹

Amtrak usage of high-speed rail track is never brought up in either the May 2007 Phasing Plan or Director Morshed's remarks made before the Select Committee on Rail Transportation.

AB3034 as Amended in Assembly April 9, 2008⁵⁰ (Authors/Coauthors/Sponsors – 5)
Section 2704.04(b)(1) – Listed segments (A)-(F) now referred to as “*corridors*”. This is the first use of the word “*corridor*” with respect to high-speed rail.

Section 2704.04(b)(2) – Added “*financing obligations*” to operations and maintenance as costs that must be covered before using revenue to fund construction of the system. This seems to be a reference to using revenues to pay potential private investors in return for their up-front construction capital.

Section 2704.08(d) – Deleted “*each specific segment*” and replaced with “*segments*” as if envisioning that multiple segments could be constructed concurrently (i.e. when building from SF to LA). This interpretation is consistent with Executive Director Morshed's remarks of April 3, 2008.

⁴⁹ Assembly Select Committee on Rail Transportation, April 3, 2008, Disc 1 of 1 #08-0403C1. Director Morshed's remarks begin at 1 hour 32 minutes 30 seconds on disc.

⁵⁰ AB 3034, as Amended in Assembly April 9, 2008. See:

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080409_amended_asm_v98.pdf

AB3034 as Amended in Assembly April 21, 2008⁵¹(Authors/Coauthors/Sponsors – 9)

Section 2704.04(b)(2) – Inserted wording stating nothing in this section shall prejudice authority’s selection of alignment from the Central Valley to the Bay Area in its certification of the EIR.

The Senate’s Revisions:

In May 2008 when the Governor released his May Budget Revision, and with more clarity than in January, he called for “assuring that expenditures of the bond funds will result in operational high-speed rail services.” This seems to have resulted in numerous and significant amendments to AB3034 as it progressed through the Senate.

AB3034 as Amended in Senate June 26, 2008⁵²(Authors/Coauthors/Sponsors – 36)

Section 185033 – Added to the Public Utilities Code to require the Authority’s 2008 Business Plan to be submitted to Legislature not later than October 1, 2008. The contents of the plan to be submitted were clearly enumerated, including a requirement the Authority include “*an estimate and description of the total anticipated federal, state, local, and other funds the authority intends to access to fund the construction and operation of the system.*”

Section 185035 – Added to Public Utilities Code requiring a Peer Group (duties and membership detailed) to evaluate the Authority’s funding plan.

Section 2704.01 – Amended to include defined terms including: (f) “*Corridor*” and (g) “*Segment*”.

Section 2704.06 – Added wording to tighten control of the Legislature over release and use of bond proceeds.

Section 2704.08(a) – With regard to no more than one-half of construction costs to be derived from bonds, the word “*segment*” was deleted and the words “*corridor or usable segment thereof*” were added. This is the first use of the term “*usable segment*”. It would be used 23 more times in this amended version of AB3034.

⁵¹ AB 3034, as Amended in Assembly April 21, 2008. See:

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080421_amended_asm_v97.pdf

⁵² AB 3034 as Amended in Senate June 26, 2008. See:

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080626_amended_sen_v96.pdf

Section 2704.08(c) – Added extensive wording strengthening the requirement of a “*funding plan*” and clearly delineating its requirements. This is one of five references in AB3034 to a “*funding plan*”.

Section 2704.08(d) – Added a new paragraph with extensive wording requiring a second “*funding plan*” and clearly delineating its requirements.

Section 2704.08(e) – Added a new paragraph with requirement Authority promptly inform Governor and the Legislature of material changes that would jeopardize completion of the corridor as previously planned.

Section 2704.08(f) – Added projected ridership and revenue and the need to test high-speed trains at 220 mph to the criteria for prioritizing the selection of corridors or usable segments for construction.

AB 3034 as also Amended in Senate as of July 7, 2008⁵³ (Authors and Coauthors -36)

185035(d) – Added to require the Authority to provide the Peer Review Group any and all information they might request.

Section 2704.01(g) – The defined term “*Segment*” is changed to “*Usable Segment*”. Definition is unchanged from previous definition. Only the word “*usable*” is added. This seems to indicate that when used previously, a “*segment*” was assumed to be “*usable*”. This change makes that assumption undeniable. After being redefined, this term is used twenty-five times in AB3034.

Section 2704.04(b)(1) – added language allowing bond expenditure for capital costs “*for the usable segment of the high-speed train system between San Francisco Transbay Terminal and Los Angeles Union Station and Anaheim. Once construction of the San Francisco-Los Angeles usable segment is fully funded, all remaining funds described in this subdivision shall be used for eligible capital costs, as described in subdivision (c)*”.

Here, the amendment’s author restored language that had been deleted from Costa’s 2002 bill when Galgiani’s AB3034 was introduced February 22. The text then continues with previously existing wording . . . (c), *for the following high-speed train system corridors*: [corridors are then listed] Wording is clumsy at best because the listed corridors include San Francisco to Los Angeles (broken into two pieces). Still, one could argue that “*used for eligible capital costs*” means “*used for eligible capital costs of listed corridors other than those already funded*”(i.e. San Francisco to Los Angeles)

⁵³ AB 3034 as Amended in Senate July 7, 2008. See:

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080707_amended_sen_v95.pdf

Section 2704.08(a) The words “*track and station costs*” used immediately before the words “*of each corridor or usable segment*” are deleted, which clarifies that not more than 50% of the total cost of construction of each a corridor or usable segment thereof was to derive from bond funds rather than simply referring to “*track and station costs.*” This is an important change as the Authority seeks to build merely track and stations on the 130 mile long Initial Construction Segment in the Central Valley.

AB 3034 as Amended in Senate as of July 10, 2008⁵⁴ (Authors and Coauthors -38)

2704.04.(a) – Added words saying that approval of bond measure shows intent of Legislature and people of California to initiate construction of a high-speed train system “*that connects San Francisco Transbay Terminal to San Jose to Merced to Fresno to Bakersfield to Palmdale to Los Angeles, and to Anaheim...consistent with EIR’s of Nov 2005 “and July 9, 2008”*”. Wording seems to indicate that SFTBT to LAUS/ANA was to be the first corridor built, not merely some short portion of it. This is consistent with 2008 Business Plan then due out October 1, 2008, and importantly it is consistent with wording of the May 2007 phasing decision made by the Authority.

2704.04.(b)(1) – Changed the words “*usable segment*” to “*corridor*” in reference to the high-speed train system connecting SFTBT to LAUS and Anaheim. Again, this seems to imply that this corridor was to be built as a singly funded project. Again, this is consistent with 2008 Business Plan that was due out October 1, 2008

2704.04.(b)(2) – Deleted requirement to “*fully fund*” SF to LA before funding other eligible capital costs found in 2704.04.(b)(1) and inserted new paragraph 2704.04.(b)(2) as follows: *Upon a finding by the authority that expenditure of bond proceeds in corridors other than the corridor described in paragraph (1) would advance the construction of the system and would **not have an adverse impact on the completion of Phase 1 of the high-speed train project, as adopted by the authority in May 2007** (Emphasis added) and described in paragraph (1), the authority may request funding for capital costs, and the Legislature may appropriate funds described in paragraph (1) in the annual Budget Act or separate statute, to be expended for the following high-speed train corridors:*

This is the first use of the term “*Phase 1*” and references it “*as adopted by the Authority in May 2007*”. It was at their May 2007 Board Meeting that the Authority debated what to build first, and by a 5-2 vote, chose San Francisco to Los Angeles/Anaheim.

⁵⁴ AB 3034 as Amended in Senate July 10, 2008. See:

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080710_amended_sen_v94.pdf

Relevant Background Information About the May 2007 Phasing Plan

The May 23, 2007 Board Meeting Minutes in a section entitled “*Project Phasing*” reveal the reasons for the Authority’s choice of San Francisco to Los Angeles/Anaheim. Executive Director Morshed recommended this first phase selection because “**This segment**” (emphasis added) would be most likely to attract outside investment, have an operating surplus and it would be long enough to develop a train system that could travel at high speeds.”⁵⁵ It is then referred to seven times in the minutes as a “starter segment.”

Another important document listed on the Authority’s website as part of the May 2007 Board Meeting Materials is a document entitled *The California High-Speed Train Network – Next Steps to Construction*. The link accessing this document is entitled *May 2007 Phasing Plan*. This seven-page document refers to Phase 1 as the “backbone” of the statewide network and describes how it must be built in stages coordinated to be completed at roughly the same time. For instance, work on Mountain Crossings “must also commence early” because of the complexity of the tasks and “are likely to be the last completed”. In the Central Valley, “the construction, equipment, manufacturing, testing, and commissioning (of high-speed trains) will take considerable time and are in the critical path of the project. Therefore, work must start as soon as possible between Merced and Bakersfield.”⁵⁶

The term “critical path” is a common engineering term. When a large project is broken into smaller projects and the large project is essentially unusable until all smaller projects are completed, the smaller project requiring the most time to complete is referred to as being on the “critical path”. Meeting Minutes record after lengthy discussion and some dissention (principally from Member Crane who was concerned over the lack of “financial commitments from different groups to have the financing for the project ready before construction begins” and Member Schenk who wanted Los Angeles to San Diego “included in the first phase of construction”) Member Stapleton moved to approve the “project phasing recommendations” and the motion carried 5-2 with Crane and Schenk voting “no”. It appears the “project phasing recommendations” being approved were those voiced by Morshed and written into the document entitled *The California High-Speed Train Network – Next Steps to Construction*.

⁵⁵ May 2007 Authority Board Meeting Notes, page 4, “Project Phasing” See:

<http://www.cahighspeedrail.ca.gov/assets/0/152/198/4cfc4b61-80b2-4175-b183-d5f37681fc71.pdf>

⁵⁶ *The California High-Speed Train Network – Next Steps to Construction*; The link accessing this document is entitled *May 2007 Phasing Plan*; “backbone” reference on page 3; timing of construction of Mountain Crossing and Merced to Bakersfield references on page 6; “critical path” reference found on page 6. See:

http://www.hsr.ca.gov/docs/brdmeetings/2007/brdmtg0507_phaseplan.pdf

In addition to the May 2007 Phasing Plan and Meeting Minutes, the May 2007 Meeting Materials contain links to a Financing Plan Report⁵⁷ and Financing Plan Presentation.⁵⁸ In all of these documents, there is never a reference to developing a Funding Plan or Business Plan for a sub-section of Phase 1. The Authority's documents speak of funding being an issue and certainly they would have liked to have been able to start with a smaller "starter segment", but anything smaller would evidently not have met Director Morshed's three criteria. Any reasonable person reading the May 2007 Meeting Minutes on Project Phasing, the phasing plan itself, the Financing Plan Report, and the Financing Plan Presentation can only conclude that the Authority envisioned the entire San Francisco to Los Angeles/Anaheim "starter segment" as a single project and was seeking to create a single funding plan for it.

Throughout 2007 and up until its publication on October 27, 2008, the Authority's financial consultant, Infrastructure Management Group, worked on a funding plan entitled *Financial Plan for the California High Speed Rail Authority- San Francisco to Anaheim Segment*.⁵⁹ Again, nowhere in this financial plan is there a discussion of funding the construction of anything short of the San Francisco to Los Angeles/Anaheim route, which in now commonly referred to as Phase 1 of the statewide high-speed train system.

Additional evidence showing the Authority's intent to build Phase 1 as one project with one funding plan is found in the 2008 Business Plan, which presented one financing plan for this phase and concluded with these words: "This Business Plan demonstrates how the system's backbone link (Los Angeles/Anaheim to San Francisco) can be financed."⁶⁰

Therefore, when section 2704.04.(b)(2) was amended to include the words "*completion of Phase 1 of the high-speed train project, as adopted by the authority in May 2007*" the Authority was bound by statute to develop a funding plan for all of Phase 1 as a single project.

Section 2704.08(b)(1) – the word "*paragraph (1)*" of subdivision (b) of Section 2704.04 was deleted because now subdivision (b) contained two paragraphs and "*any eligible capital cost on each corridor, or usable segment thereof*" were described with both paragraphs together. This is important because the first paragraph now spoke of a "*corridor*" of a high-speed train system between SFTBT and LAUS/ANA and the second paragraph spoke of "*completion of that Phase*

⁵⁷ *Preliminary Funding Strategy and Finance Plan: Bay Area to Anaheim Segments-Report*. Accessed from the Authority's website with a link entitled *May 2007 Financing Plan Report*. See: http://www.hsr.ca.gov/docs/brdmeetings/2007/brdmtg0507_financialrpt.pdf

⁵⁸ *Preliminary Funding Strategy and Finance Plan: Bay Area to Anaheim Segments-Presentation*. Accessed from the Authority's website with a link entitled *May 2007 Financing Plan Presentation*. See http://www.hsr.ca.gov/docs/brdmeetings/2007/brdmtg0507_financialplan.pdf

⁵⁹ IMG's Financial Plan for the California High-Speed Rail Authority San Francisco to Anaheim Segment, dated October 27, 2008. See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2008_SRC_FinPlan.pdf

⁶⁰ 2008 Business Plan, page 21, section entitled Finance Plan. See. http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2008_FullRpt.pdf

1 of the high-speed train project, as adopted by the authority in May 2007 and described in paragraph (1).”(Emphasis added) Once again, “*as adopted by the authority in May 2007*”, San Francisco Transbay Terminal to Los Angeles Union Station/Anaheim was to be ONE project funded by ONE funding plan.

AB 3034 as Amended in Senate as of August 6, 2008⁶¹ (Authors and Coauthors -38)

185033 of the Public Utilities Code was changed to move up the date of the 2008 Business Plan from October 1 to September 1. That plan was actually released November 7, four days after the ballot measure was voted on.

SEC. 4. Section 1 of Chapter 697 of the Statutes of 2002, as amended by Section 1 of Chapter 71 of the Statutes of 2004, was repealed and rewritten into SEC 8.

SEC. 5. Section 2 of Chapter 697 of the Statutes of 2002, as amended by Sections 1 and 2 of Chapter 44 of the Statutes of 2006, was repealed and rewritten in to SEC 9.

SEC. 6. Section 3 of Chapter 697 of the Statutes of 2002, as amended by Section 3 of Chapter 44 of the Statutes of 2006, repealed and was rewritten in to SEC 9.

SEC. 7. Section 4 of Chapter 697 of the Statutes of 2002, as amended by Section 4 of Chapter 44 of the Statutes of 2006, is repealed. This section mostly pertains to the ballot wording in the bond act and not the funding.

2704.04(a) and (b) – Amended to delete an important, but perhaps redundant passage:

...”upon appropriation by the Legislature in the annual Budget Act or separate statute, shall be used for (A)planning the high-speed train system and (B) capital costs, described in subdivision (c), ~~for the usable segment corridor of the high-speed train system between San Francisco Transbay Terminal and Los Angeles Union Station and Anaheim~~” This may have just been a cleanup of wording because paragraphs (c) does not specifically list as a single segment SFTBT to LAUS/ANA. Instead, it inserts a new paragraph (2) regarding the plan “*adopted by the authority in May 2007*”, renames old paragraph (2) as (3) leaving wording identical except for now referencing paragraph (2) regarding the May decision rather than paragraph (1).

AB3034, as amended in the Senate August 6th appears to be very close, if not identical to the bill eventually approved and signed into law. The text of the August 6th version, taken from the

⁶¹ AB 3034 as Amended in Senate August 6, 2008. See:

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080806_amended_sen_v93.pdf

same government website as all other versions, no longer uses ~~strikeout~~ to show newly-deleted wording nor does this version single out new text with *italics*.

The Legislative Council's Digest pointing out recent amendments makes no mention of changes to sections 2704.04(a) and (b). However, the rewrite is extensive and, depending on a reader's viewpoint, the August 6th version may be interpreted as 'watering down' the July 10th version with regard to "*completion of Phase 1 of the high-speed train project, as adopted by the authority in May 2007.*" Others might simply view the changes as a cleanup of wording and point to the fact that the Legislative Council's Digest makes no reference to these changes. Footnotes cited previously for both the July 10th and the August 6th amended version of AB3034 allow for a direct comparison.

2704.07 – This new section was added: "*The authority shall pursue and obtain other private and public funds, including, but not limited to, federal funds, funds from revenue bonds, and local funds, to augment the proceeds of this chapter.*" Significant only to the extent that it was added to stress a point.

2704.08(f)(4) – Wording was added regarding corridor or usable segment selection to include: "*the extent to which the corridors include facilities contained therein to enhance the connectivity of the high-speed train network to other modes of transit, including, but not limited to, conventional rail (intercity rail, commuter rail, light rail, or other rail transit), bus, or air transit.*" This seems in line with the Phasing Plan adopted in May 2007 where parts of the SF to LAUS/ANA that could have early utilization by Metrolink and Caltrain might be given priority.

Executive Director Morshed's Description of the Authority's Actual Funding Plan

At the time a requirement for a funding plan was being written into AB3034, Mehdi Morshed, Executive Director of the Authority, gave voice to the Authority's actual funding plan in testimony made April 3, 2008 at a hearing before the Assembly Select Committee on Rail Transportation. Quoting from the hearing recording:

"We anticipate that the phase 1 of the high speed train system, once it is constructed, after 2-3 years of operation, we'll begin generating over a billion dollars a year in revenue surplus. And that revenue surplus is being used as a way of basically developing a financing for the project. We have a financing plan for the project that Phase 1 is estimated to cost about 30 billion dollars. We're assuming about 9 billion dollars from the state. We assume about a similar amount from the federal government. And the last third of the cost is going to be covered by the private sector utilizing the surplus revenues and the other benefits that the private sector would get from a high-speed train. So that's how the financing of the project is and you know that's going to we anticipate moving forward."

Executive Director Medhi Morshed, April 3, 2008⁶²

⁶² Assembly Select Committee on Rail Transportation, April 3, 2008, Disc 1 of 1 #08-0403C1
Morshed remarks begin at 1 hour 30 minutes 54 seconds on disc.

Morshed’s thoughts found their way into the 2008 Business Plan with a similar level of assurance that they would materialize; none at all. Nearly six years later “none at all” is exactly the amount of private funds secured by the Authority and “none at all” is the amount of federal funds they have been told by Congress to expect in the future.

Part IV

Soaring Costs Magnify the Inadequacies of the Authority's Funding Plan

The 2008 Business Plan

AB3034 mandated that “*the authority shall prepare, publish, and submit to the Legislature, not later than September 1, 2008, “a revised business plan” that was to contain “an estimate and description of the total anticipated federal, state, local, and other funds the Authority intends to access to fund the construction and operation of the system.”*”⁶³ The plan was finally published on November 7, 2008.⁶⁴ This was two months later than statutorily required and after passage of Proposition 1A (enacting statutes of AB3034). It showed all \$9 billion in state high-speed rail bonds along with “targeting” \$24 billion in federal, private and local sources to fund the \$33 billion capital cost of Phase 1.⁶⁵ \$12-\$16 billion of federal funding was explicitly shown.⁶⁶ This was done despite the Authority’s policy going back to 1999, stating that “federal grant funding shall not be included in the Authority’s financial plan until a funding commitment is expressed by either the Congress or the administration.” [See FN34]

Another questionable practice was combining the \$9 billion in bonds, which should have been considered “year-of expenditure dollars”, with costs expressed in 2008 dollars. This deception was corrected one year later when the Authority in its December 2009 Report to the Legislature expressed capital costs in “year-of-expenditure dollars” as demanded by both the Department of Transportation and the Legislature. The result was an updated cost of \$42.6 billion in YOE dollars, still with only \$9 billion in state bonds.⁶⁷

Where once the Authority had speculated that Californians would need to invest, perhaps only about a third of the total project cost [See FN38] and the Authority had been committed to a policy of not including federal grant funding in a financial plan “until a funding commitment is expressed by either the Congress or the administration,” [See FN 34] the Authority now projected that Californians would need to invest only about a fifth of the total project cost and was showing \$17-\$19 billion in federal funding⁶⁸; none of which was at the time a commitment expressed by either the Congress or the Administration.

⁶³ AB 3034 adding Section 185033 to the Public Utilities Code. See: http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080826_chaptered.pdf

⁶⁴ The Cover Letter accompanying the 2008 Business Plan was undated. See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2008_CoverLtr.pdf. The cover Letter for 2008 Business Plan link The news release announcing the plan was dated November 7, 2008. See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2008_NewsRelease.pdf. The link to the News Release.

⁶⁵ 2008 Business Plan, Finance Plan section, page 21. See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2008_FullRpt.pdf

⁶⁶ 2008 Business Plan, Finance Plan section, Figure 26, page 21

⁶⁷ December 2009 Report to the Legislature, Cost of the System, Cost Summary, page 84. See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2009_Legis_FullRpt.pdf

⁶⁸ December 2009 Report to the Legislature, Paying for the System, Financial Plan Overview, page 92

The Draft and Revised 2012 Business Plans

The capital cost situation and prospects for funding would only worsen for the Authority. By November 2011, the capital costs in the Draft 2012 Plan for the San Francisco to Los Angeles/Anaheim phase had ballooned to between \$98.5 and \$117.6 billion in year-of-expenditure dollars.⁶⁹ Costs for the extensions to Sacramento and San Diego went unreported in that Draft 2012 Business Plan. Some \$3.3 billion of one-time, ARRA funding (“stimulus funds”) was now committed by the federal government. But the Revised 2012 Business Plan, released in April 2014, called for much more. Consistent with previous plans, the Authority provided ranges of costs dependent upon the alignment chosen. The eventual alignment chosen is dictated by the environmental permitting process and this process was incomplete in April 2012, as it still is in March 2014. The Authority deals with the problem of a high cost alignment by glossing over the high-end cost estimates and elaborating only on the low-end cost possibility.

The Revised 2012 Business Plan went one step further and elaborated only on the low-end cost (“planning cost scenario”) of a scaled-down Phase 1 where high-speed trains would share track with Caltrain in the Bay Area and Metrolink trains in the Los Angeles Basin. The Authority called this project “Phase 1 Blended”. Phase 1 Blended was estimated to cost \$68.4 billion in YOE dollars, of which \$41.7 billion would come from yet-unsecured “federal support” and \$13.1 billion would come from the private sector. With only \$3.3 billion shown as secured federal support and no committed private investment the total funding gap was \$51.5 billion.⁷⁰

The planning cost scenario rises to \$91.4 billion and funding gap rises to \$74.5 billion if the Full Build of Phase 1 turns out to be necessary to create a system in compliance with other provisions of AB3034 (i.e. travel times, minimum headway, etc.).⁷¹ The April 2012 Plan provides no figure comparable to the \$91.4 billion figure for the possible high-end cost of this project. However, the plan does provide a high-end cost number comparable to the \$68.4 billion number for the planning case scenario of Phase 1 Blended, \$79.8 billion.⁷² Scaling \$91.4 billion by the ratio of \$79.8/\$68.4 yields an estimated high-end cost for the Full Build of Phase 1 of \$106.6 billion and the Authority’s funding gap grows to \$89.7 billion.

The Authority solved some of the April 2012 plan’s funding shortfall by declaring they would build a profitable Initial Operating Segment (IOS) from Merced to San Fernando in spite of

⁶⁹ Draft 2012 Business Plan, released November 2011, Chapter 8 Funding and Financing, page 8-2. See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2012Draft_web.pdf

⁷⁰ Revised 2012 Business Plan, sum of figures found in Exhibits 7-15 *Total sources and uses for IOS to Bay to Basin assuming private-sector investment in 2023* (2013 to 2026) (YOE dollars in millions) and 7-17. *Sources and uses—Phase 1 Blended with private-sector capital* (YOE dollars in millions) See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2012_rpt.pdf

⁷¹ Revised 2012 Business Plan, Executive Summary, page ES-14

⁷² Revised 2012 Business Plan, Exhibit 7-20. *Total sources and uses of funds—increased construction costs* (YOE dollars in millions)

having at least a \$20.3 billion federal funding shortfall for this work.⁷³ The April 2012 plan pushed off the larger funding shortfall into the future.

Before reviewing the Authority's inadequate funding plan for the IOS, it is worth reviewing how the project and its funding plan have evolved since the inception of the Intercity High-Speed Rail Commission twenty-one years ago.

- Twenty-one years have passed since the Commission was charged with preparing “a 20-year high-speed intercity ground transportation plan”. [See FN2]
- The plan first envisioned connected Los Angeles to San Francisco at a cost of between \$12.1 and \$16.5 billion (1996 dollars) along a route stretching a distance of between 398 and 448 miles depending on alignment.⁷⁴ It was to be in revenue service by fiscal year 2005/6.⁷⁵ By April 2012, that vision had translated into a \$91.4 to \$106.6 billion project, 520 miles in length to be completed in 2033.⁷⁶
- The Authority currently makes no cost or completion date estimates for the extensions linking high-speed rail to Sacramento and San Diego.⁷⁷ A reasonable guess made by scaling cost and years of construction time by 800/520 (the length of the statewide system/the length of Phase 1) yields a cost estimate of up to \$164 billion and a completion date of 2044; nearly 40 years after Statewide Program EIR was certified.
- The legislative mandate to the Commission and later to the Authority to develop a “*high-speed intercity rail plan similar to California's former freeway plan and designate an entity with a stable and predictable funding source to implement the plan*” has evolved from dedicated inflation indexed voter-approved taxes that only voters could later decide to repeal into a plan that hopes for (1) massive federal grants from non-existent federal transportation programs, (2) massive private participation when not one penny of private money has been forthcoming in the last twenty-one years, and (3) billions of dollars in local government participation in an era when many of California's cities teeter on the edge of bankruptcy.

Against this backdrop, the Authority's April 2012 plan proposed a funding plan for their IOS connecting Merced to San Fernando that includes \$7.1 billion of the \$8.2 billion in remaining unspent rail bonds.⁷⁸ The estimated cost for the IOS ranges from \$26.9 billion to \$31.3 billion

⁷³ Revised 2012 Business Plan, Exhibit 7-10. *Sources and uses for completing the IOS* (YOE dollars in millions)

⁷⁴ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Capital Cost Summary Table 3.3, page 3-25

⁷⁵ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Project Revenue Financing, page 5-9

⁷⁶ Revised 2012 Business Plan, Exhibit ES-3. Summary of each phased implementation section, page ES-13

⁷⁷ Revised 2012 Business Plan, Exhibit 2-6. Projected milestones for completing the environmental review process/potential construction completion, page 2-28

⁷⁸ Revised 2012 Business Plan, sum of state bond funds shown in Exhibit 7-9 IOS-First Construction funding sources (YOE dollars in millions) and Exhibit 7-10 Sources and uses for completing the IOS (YOE dollars in millions)

expressed in 2011 dollars.⁷⁹ The plan later details the low end (planning cost scenario) of this cost range expressed in year-of-expenditure dollars and arrives at a figure of \$31.3 billion.⁸⁰ The plan does not detail the cost to construct the IOS in year-of-expenditure dollars for the high cost estimate. However, if the low cost estimate expressed in YOE dollars is multiplied by the ratio of \$31.3/\$26.9, the high cost is estimated to be \$36.4 billion in YOE dollars. The Authority's funding plan should cover the high number, \$36.4 billion, and not merely the low number of \$31.3 billion if taxpayers are to be reasonably assured that the Authority will be able to complete the IOS.

The April 2012 plan notes the following committed funding sources for the IOS:

Federal Grants Secured	\$3.3 billion
State Bonds (Prop. 1A)	<u>\$2.7 billion</u>
	\$6.0 billion

This leaves a shortfall of \$30.4 billion if the funding plan is to support the high end of the range of current cost estimates. Interestingly, the Authority's current funding plan calls for:

Federal support	\$20.3 billion
State Bonds (Prop. 1A)	\$4.4 billion
Other Funds	<u>\$.7 billion</u>
	\$25.4 billion

When combined with the \$6 billion in committed funds, these sources exactly match the funds needed for the low cost scenario, but not enough to support the high cost scenario. In other words, even when the Authority simply makes up numbers, they do not make the numbers high enough to ensure the IOS could actually be built. Moreover, because the \$20.3 billion in federal support is merely a wish on the Authority's part, not supported by any existing federal programs or commitments, this funding plan was found to be out of compliance with the requirements of Proposition 1A.⁸¹

⁷⁹ Revised 2012 Business Plan, Exhibit 3-3 Cost to Construct IOS- Central Valley to San Fernando Valley (base year fiscal year 2011 dollars), page 3-8

⁸⁰ Revised 2012 Business Plan, sum of figures tallied in Exhibits 7-9 (IOS First Construction Funding Sources) and 7-10 (Sources and Uses for Completing the IOS)

⁸¹ On August 16, 2013, Sacramento Superior Court Judge Michael Kenny in the case Tos, Fukuda, and the County of Kings versus California High-Speed Rail Authority Et al. ruled in favor of the Plaintiffs

The Authority's Tiny Fig Leaf – Cap and Trade Funds

The Authority seeks to fill the funding gap for the IOS with the promise of Cap and Trade funds. Since “federal support” and “other funds” are as yet uncommitted by any party, the funding gap to be filled by Cap and Trade funds throughout the remaining construction period (2014-2021) is stunningly large.

Required Committed Funds (high end of cost range)	\$36.4 billion
Federal Grants Secured	- \$3.3 billion
State Bonds (Prop. 1A)	<u>- \$7.1 billion</u>
Funding Gap	\$26.0 billion

Into this gap, Governor Brown supports the allocation of \$.250 billion in Cap and Trade funds in this year's state budget to build the IOS when the funding gap averages \$3.25 billion/year each year over the Authority's estimated eight-year construction period. On the face of it, this one-year allocation can be dismissed because it covers less than 8% of the first year's funding gap. Moreover, even if this allocation were to be approved by the legislature in FY14, there is no guarantee that other Cap and Trade funds will be available and/or allocated in future years.

It is worth comparing the current Cap and Trade funding scheme to the requirements for a base funding source once laid out by the Commission in 1996: [FN 22]

“In order to qualify as a base funding source, the source must:

- be able to substantially finance the construction of the system;
- secure debt against the revenue source;
- provide funding irrespective of the construction status or operational readiness of the system; and
- have stable and reliable revenue growth potential.”

With regard to first criteria, “be able to substantially finance the construction of the system”, the \$.250 billion in Cap and Trade funds source fails because it amounts to less than 1% of the total funding gap of the IOS.

With regard to the second criteria, “secure debt against the revenue source” the Cap and Trade fund source fails because a one-time assured revenue cannot be used to secure debt.

With regard to the third criteria, “provide funding irrespective of the construction status or operational readiness of the system,” environmentalists will surely argue that Cap and Trade funds are required to go towards projects that reduce greenhouse gas emissions within the state by the year 2020. As the IOS will not even be in operation until 2022, and will result in substantial and irreversible emissions during its eight-year construction period, Cap and Trade funds also fail this criteria.

Lastly, with regard to the fourth criteria, little is known about the stability, reliability, or growth potential of Cap and Trade funds. However, plaintiffs are currently in court arguing that Cap and Trade fees amount to a tax, and that California's Global Warming Act (AB32) authorizing these mandatory fees was passed without the necessary two-thirds majority called for by Proposition 13 causing this test to also fail.

The Draft 2014 Business Plan – The recently released Draft 2014 Business Plan does not address the funding shortfalls associated with IOS construction or later development of the system (i.e. Bay to Basin, Phase 1 Blended, or Phase 1). The cost of the project is largely unchanged as are the committed sources of funding.⁸² However, previous plans have shown a range of costs, a low-end or “planning cost scenario” and a high-end cost, dependent on the eventual alignment that is chosen. The Draft 2014 Plan eliminates all discussion of high-end costs even though the plan clearly points out that the project level environmental work needed to select a final alignment is incomplete for all but the Merced to Fresno section.⁸³

In another attempt to disguise true costs, the “Phase 1 Full Build” option, mentioned twenty times in the April 2012 plan and estimated to cost \$23 billion more than the Phase 1 Blended option, is not mentioned once in the Draft 2014 plan. The term “Phase 1 Blended” used in the previous April 2012 plan is replaced with the term “Phase 1” in all but four references in the draft 2014 plan. This oversight (that it was left in at all) may be attributed to the fact that the plan is a “draft” and will probably be corrected in the final 2014 plan to remove all traces of “Phase 1 Blended” in an effort to lull the reader into forgetting that Phase 1 is now a degraded Phase 1 compared to previous plans.

The Authority is faced with an intractable funding problem of their own making. They created the problem in December of 1999 when they swung toward favoring a “phased-funding approach” instead of asking the citizens of California to approve a temporary sales tax to create a stable and predictable funding source to implement their plan. Instead, the Authority made a ‘bad bet’ that the federal government would develop a program to fund high-speed rail projects as they had once funded the construction of the Interstate Highway System; a federal excise tax on gasoline paid by motorists in each state and sent back to the states to fund interstate highway projects. No such federal high speed-rail financing program has been created in the nearly fifteen years that the Authority has been waiting for it and no such program is included in the recently passed 2014 federal budget. None is even contemplated.

⁸² Draft 2014 Business Plan, *EXHIBIT 3.5 YEAR-OF-EXPENDITURE COST ESTIMATES*: See: http://www.hsr.ca.gov/docs/about/business_plans/FINAL_Draft_2014_Business_Plan.pdf

⁸³ Draft 2014 Business Plan, Exhibit 1.2 – Completed and Projected Milestones for the Environmental Review Process by Project Section, page 26

Part V

The Authority's Funding Plan Mandate Regarding Environmental Work

Environmental Clearances Required in the Funding Plan Mandates of AB3034

The passage of Assembly Bill 3034 rewrote section 2704.08.(c) of the Streets and Highway code to read:

“No later than 90 days prior to the submittal to the Legislature and the Governor of the initial request for appropriation of proceeds of bonds authorized by this chapter for any eligible capital costs on each corridor, or usable segment thereof, identified in subdivision (b) of Section 2704.04, other than costs described in subdivision (g), the authority shall have approved and submitted to the Director of Finance, the peer review group established pursuant to Section 185035 of the Public Utilities Code, and the policy committees with jurisdiction over transportation matters and the fiscal committees in both houses of the Legislature, a detailed funding plan for that corridor or a usable segment thereof. (2) The plan shall include, identify, or certify to all of the following:[List of Items A through K follows]”

Item (K), the last of the referenced items, reads as follows:

“The authority has completed all necessary project level environmental clearances necessary to proceed to construction.”

When making its initial request for appropriation of proceeds of bonds in 2012 and seeking to begin construction of the Initial Operating Segment running from Merced to San Fernando, the Authority's plan was clearly out of compliance with this requirement and a court has so ruled. [FN81]

The Authority has treated this as a mere technicality and now touts the fact that it has achieved environmental clearance for the Merced to Fresno section where it seeks to begin IOS construction. However, for good reasons, its funding plan to begin building the IOS from Merced to San Fernando is required by statute to certify that the Authority has completed all environmental clearances for the 300-mile IOS. This would include clearances for the segments from Fresno to Bakersfield, Bakersfield to Palmdale, and Palmdale to Los Angeles. The Authority's Draft 2014 Business Plan admits it still does not have these clearances and projects they will not have all of them until the summer of 2015.⁸⁴ The Authority and the public will not have reasonable assurances that completing the IOS is even feasible until all environmental clearances are complete.

⁸⁴ Draft 2014 Business Plan, Exhibit 1.2 – Completed and Projected Milestones for the Environmental Review Process by Project Section, page 26

In addition to passing the test of feasibility, the required environmental work includes completing engineering work up to the 15% level and choosing a final alignment through each section. Both of these completed tasks make it possible to more reasonably estimate costs and the required funds to complete the project.

Quoting from the Certified EIR for the Merced to Fresno section:

After completion of the Statewide Program Level EIR, “The next step in the HST development process includes additional engineering and design and preparation of project EIR/EISs for all HST project sections. This Merced to Fresno Section Project EIR/EIS (Tier 2) evaluates proposed alignments and stations in site-specific detail to provide a complete assessment of the direct, indirect, and cumulative effects of the proposed action, considers public and agency participation in the scoping process, and was developed in consultation with resource and regulatory agencies, including EPA and USACE. FRA and the Authority intend this document to be sufficient to support Section 404 permit decisions and Section 408 permit decisions (as applicable) for alteration/modification of completed federal flood risk management facilities and any associated operation and maintenance, and real estate permissions or instruments (as applicable). Both the EPA and USACE issued letters identifying the Hybrid Alternative as the preliminary LEDPA (March 23, 2012, and March 26, 2012, respectively)”⁸⁵

Statute dictates that ALL environmental clearances be in place as part of the funding plan before the Authority may ask the Legislature for an appropriation of bond funds. Were it not for the law, common sense would dictate this requirement to simply assure Californians the Authority could reasonably expect to build from point A to point B with a reasonable estimate of costs before committing funds for final engineering work and construction.

The Statewide Program EIR/EIS

The Statewide Program EIR/EIS (Statewide EIR) certified in 2005 looked at the a high-speed train system linking all of California’s major metropolitan areas (the Bay Area, Sacramento, the Los Angeles Basin, and San Diego) and compared the environmental costs (“impacts”) and benefits of the statewide system to a No Project Alternative and a Modal Alternative.⁸⁶ Pertinent excerpts from the Statewide EIR are quoted below describing the No Project, Modal, and High-Speed Train Alternatives.

The No Project Alternative

“For the No Project Alternative, both existing and future conditions (2020) are considered. The No Project Alternative represents the state’s transportation system (highway, air, and conventional rail) as it existed in 1999–2000 and as it would be in 2020 with the addition of transportation projects currently programmed for implementation (already in funded

⁸⁵ California High-Speed Train Project EIR/EIS – Merced to Fresno Section, page 1-2. See: http://www.hsr.ca.gov/docs/programs/merced-fresno-eir/final_EIR_MerFres_1Purpose.pdf

⁸⁶ Statewide Program EIR/EIS, Summary, Alternatives Including High-Speed Train, page S-3. See: http://www.hsr.ca.gov/docs/programs/eir-eis/statewide_final_EIR_vol1summary.pdf

programs/financially constrained plans) according to the State Transportation Improvement Program (STIP), regional transportation plans (RTPs) for all modes of travel, airport improvement plans, and intercity passenger rail plans. The No Project Alternative addresses the geographic area serving the same intercity travel market as the proposed HST Alternative (generally, from Sacramento and the San Francisco Bay Area, through the Central Valley, to Los Angeles and San Diego).”

The Modal Alternative

“The Modal Alternative is described as a set of hypothetical improvements representing a possible response to projected intercity travel demand that will not be met by the No Project Alternative. The improvements described for each Modal Alternative component are capacity oriented (e.g., additional traffic lanes for highways with associated interchange reconfiguration and ramp improvements; additional gates and runways for airports). Overall, the highway improvements assumed under the Modal Alternative represent a total of over 2,970 additional lane miles (mi) (4,780 lane kilometers [km]). Two additional highway lanes would be required on most intercity highways, and as many as four additional lanes would be needed to meet forecasted demand in certain segments. Projected airport improvements would include over 90 new gates and five new runways statewide.”

The High-Speed Train Alternative

“State-of-the-art, electrically powered, high-speed, steel-wheel-on-steel-rail technology is being considered for a proposed system that would serve the major metropolitan centers of California, extending from the San Francisco Bay Area and Sacramento, through the Central Valley, to Los Angeles and San Diego. State-of-the-art safety, signaling, and automated train-control systems would be used. By 2020, the proposed service would include approximately 86 weekday trains in each direction to serve the study area intercity travel market, with 64 of the trains running between northern and southern California and the remaining 22 trains serving shorter distance markets. Most passenger service is assumed to run between 6:00 a.m. and 8:00 p.m. The proposed system would be capable of speeds in excess of 200 mph (322 kph), and the projected travel times would be designed to compete with air and auto travel. For example, the projected travel time by HST between San Francisco and Los Angeles would be just under 2 hrs and 30 min, and between Los Angeles and San Diego it would be just over one hour. The route representing the highest return on investment from the Authority’s Business Plan is used to represent the HST Alternative for general comparison and evaluation with the other system alternatives. This representative system was forecast to carry between 42 and 68 million passengers in 2020, with the potential to accommodate higher ridership by adding trains or using longer trains. For a conservative assessment of potential environmental impacts, the higher ridership forecast is used in describing the proposed HST Alternative and its impacts, and is referred to in the Program EIR/EIS as the “representative demand” ridership. However, for resource topics where the high-end ridership forecasts would result in potential benefits (e.g., energy, air quality, and travel conditions), additional analysis is included to address the impacts associated with the low-end forecasts....

....The cost to implement the representative HST train system, which reflects a similar network of alignment and station options to that presented in the Authority’s Business Plan, is estimated to range between \$33 billion and \$37 billion (2003 dollars), depending on the alignment and station options selected. The cost estimate includes right-of-way, track, guideway, tunneling, stations, and mitigation.”

The three alternatives were then evaluated and compared regarding their key environmental impacts and benefits. The statewide high-speed train network was then chosen as the preferred alternative. A table was presented showing its benefits and impacts, including:⁸⁷

HST Benefits

- Congestion reduction on intercity highways
- Reduction in time of travel
- Decrease in injuries and fatalities on highways
- Overall savings in passenger costs
- Air quality benefit
- Energy benefit

HST Environmental Impacts

- Moderate to high visual impacts especially in scenic open space
- High impact on noise
- Right of Way needs impacting 2,445-3860 acres of farmland
- Adverse impact on 1201-1568 acres of sensitive habitat, wetlands and special status species
- Adverse impact on floodplains, streams, and lakes
- Potential impacts on 1-6 wildlife refuges
- Medium to high ranking for potential impacts on archaeological resources and historical properties
- Impacts on farmlands

The Statewide high-speed train alternative won-out over the other alternatives, but that is NOT what the Authority seeks to build and not even one usable segment of the statewide system is currently scheduled to be completed by 2020; the year used in the Statewide EIR for comparing the three alternatives. There are synergies that come with building the whole statewide system. For instance, the route between Los Angeles and Sacramento mostly uses track that also runs between Los Angeles and San Francisco. Extending the system to Sacramento substantially increases environmental benefits while the increase in environmental impacts is minimal. Likewise, connecting Los Angeles to San Diego also connects travelers from Sacramento or San Francisco with San Diego. It is synergies like these that caused ridership estimates to double when extensions were added to Sacramento and San Diego according to studies done by the

⁸⁷ Statewide Program EIR/EIS, Table S.6-1 Summary of Key Environmental Impacts and Benefits for System Alternatives, pages S-11 to S-16

Intercity High-Speed Rail Commission.⁸⁴ Similar results are detailed in a Ridership and Revenue study conducted for the Authority as part of their 2008 Business Plan.⁸⁸ In fact, the Commission's final report showed the project only having a net positive economic benefit to Californians if the extensions to Sacramento and San Diego were built.⁸⁹ The same synergies exist today.

The central problem with the Authority's incremental approach to funding and construction of the system is that benefits accrue mostly with completion of the entire system while environmental costs, as well as construction costs, accrue approximately proportional to miles of track constructed. For this reason, it is impossible to believe that a Merced to Fresno or even a Merced to San Fernando project could obtain an environmental clearance on its own. Merced to Fresno and the other segments encompassing the IOS can only achieve clearance as part of the statewide system that was compared to the "No Project Alternative" and the "Modal Alternative". Californians have no assurance that the statewide system, or even Phase 1 linking San Francisco to Los Angeles, will ever be built because the Authority has never acquired the tens or hundreds of billions of dollars necessary for their construction. Californians living in the Central Valley face an environmental catastrophe with no assurance of any benefits associated with high-speed train travel.

Years of delay and a lack of high-speed rail funds have left Californians facing an alternative worse than anything envisioned in the Statewide EIR if the Authority is allowed to start accessing bond funds to build in the Central Valley. The "No Project Alternative" will be realized when 2020 arrives, billions of dollars will have been spent destroying lives and property in the Central Valley, and the benefits of traveling by high-speed trains will not have been experienced by any Californians.

Mark R. Powell
March 2014

⁸⁸ CALIFORNIA HIGH-SPEED TRAIN PROJECT RIDERSHIP AND REVENUE FORECASTS, RIDERS AND REVENUE FOR HIGH-SPEED TRAIN FULL SYSTEM, YEAR 2030, page 11.
See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2008_SRC_RiderRevenue.pdf

⁸⁹ High Speed Rail Summary Report and Action Plan, Published by Intercity High-Speed Rail Commission December 13, 1996, Table 7.8 Total Discounted Costs and Economic Benefits (Year 2000-2050)

2014 Business Plan RECORD DETAIL

Record Date : 4/7/2014
Submission Date : 4/7/2014
Affiliation Type : Individual
Interest As : Individual
Submission Method : Project Email
First Name : Kathy
Last Name : Hamilton
Business/Organization :
City :
County :
Zip Code : 00000

Stakeholder Comments/Issues : In addition to having my comments listed under Annie Parker's name you didn't address something very important, that is the inclusion of the Anaheim costs on the Errata Sheet.
In the draft business ply, You clearly have Metro link providing the last miles to Anaheim on their train, hence not a one seat ride. If you want to have a one-seat ride by high-speed rail, you have to add the \$3-4 billion or whatever the current cost is to do the job properly. That would make the total program cost estimate over \$70 billion. It is also unbelievable that the High-Speed Rail Authority staff and Board can read and consider all the comments made as of today and have a meeting on April 10th. That is disrespectful to all the people who spent perhaps days formulating their comments. Thank you,
Kathy Hamilton
>
>
>
http://hsr.ca.gov/docs/brdmeetings/2014/brdmtg_Item5_Attachment_Draft_2014_Business_Plan_Errata_Sheet.pdf
>
>
>

Draft Business Plan Comment Type :

2014 Business Plan RECORD DETAIL

Record Date : 4/7/2014
Submission Date : 4/7/2014
Affiliation Type : Individual
Interest As : Individual
Submission Method : Project Email
First Name : Paula
Last Name : Moran
Business/Organization :
City :
County :
Zip Code : 00000

Stakeholder Comments/Issues :

To whom it may concern:

After reading in newspapers regarding the very controversial High Speed Rail plan, as a mother, grandmother and great grandmother who will eventually leave this planet for a better home, I cannot, in good conscience, leave this enormous debt to them.

Regardless of the many jobs it will bring, where is it going? It will ruin our economy, already in shambles, and ridership has not even been explored nor the cost of transporting passengers has been addressed. This is mind-boggling to an 88 year old proud American. That money, actually MY money, can be better distributed to far worthier causes for now and in the future.

Respectfully,

Paula Moran
Sent from my iPad

**Draft Business Plan Comment
Type :**

2014 Business Plan RECORD DETAIL

Record Date : 4/7/2014
Submission Date : 4/7/2014
Affiliation Type : Local Agency
Interest As : Local Agency
Submission Method : Letter
First Name : Colleen
Last Name : Carlson
Business/Organization : County of Kings
City : Hanford
County : Kings
Zip Code : 93230
Stakeholder Comments/Issues : Please find attached the County of Kings' comments on the Authority's draft 2014 Business Plan.
Draft Business Plan Comment Type :
Attachments : Signed Co.ofKings Comments on 2014 Biz Plan.pdf (181 kb)



COUNTY OF KINGS BOARD OF SUPERVISORS

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KETTLEMAN CITY

DOUG VERBOON - DISTRICT 3
NORTH HANFORD, ISLAND DISTRICT &
NORTH LEMOORE

TONY BARBA - DISTRICT 4
ARMONA & HANFORD

RICHARD FAGUNDES - DISTRICT 5
HANFORD & BURRIS PARK

April 4, 2014

Board Members
California High-Speed Rail Authority
770 L Street, Suite 800
Sacramento, CA 95814

David Valenstein
Federal Railroad Administration
1200 New Jersey Avenue SE MS-20
Washington, DC 20590

Re: **Comments Concerning the California High-Speed Rail Authority's Draft
2014 Business Plan.**

Dear Chairman Richard, Members of the CCHSRA Board and Mr. Valenstein:

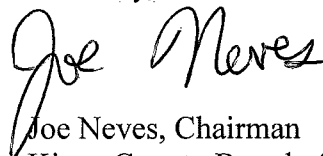
The County of Kings provides comments herein relating to the Authority's Draft 2014 Business Plan ("2014 Business Plan" or "Plan"). The Plan:

- Is flawed.
- Lacks detail and justification.
- Asserts conclusions without analysis or fact.
- Bases expected outcomes on highly speculative premises.
- Lacks legitimate funding sources to carry out its ambitious yet short-sighted, ever-changing goals.
- Counts on illusory funding sources such as:
 - significant additional federal funding that is not on the horizon,
 - cap and trade funds for which it does not qualify because those funds are designed to reduce greenhouse gas emission levels by 2020, but the project, if it tragically somehow proceeds as currently planned, will be a net polluter for at least the next 30 years, and
 - anticipates private funding that will not get near this mismanaged project.
- Lacks legitimate greenhouse gas emission reductions analysis to support assertions such as the use of Prop. 1A funds will result in the reduction of "tens of thousands of tons of GHG emissions".

- Fails to address added costs such as:
 - mitigation,
 - habitat compensation,
 - agriculture preservation,
 - infrastructure relocation,
 - change orders that will surely surface as a result of the design-build approach.
- Fails to explain the source of the \$20 Billion needed to complete the IOS.
- Fails to detail how it will achieve independent utility, particularly since it does not identify stations, has no relationship with or control over Amtrak or regional train authorities, and has no ability to independently operate a non-high speed rail track.
- Contains exaggerated ridership forecasts created by hand-picked, biased modelers not independent reviewers who would insure public confidence in the process.
- Contains exaggerated, unsupported job creation forecasts.
- Lacks candor regarding the project's status, progress and prognosis.
- Fails to comply with the requirements of Public Utilities Code section 185033.
- Yet again fails to comply with the requirements of Proposition 1A.

The People deserve more. If the project cannot be achieved within the parameters specified by law, own up to that and stop the project.

Sincerely,



Joe Neves, Chairman
Kings County Board of Supervisors

Cc:

Congressman David Valadao
 Congressman Kevin McCarthy
 Congressman Jeff Denham
 Congressman Devin Nunes
 State Senator Andy Vidak
 State Senator Jim Nielson
 Assemblyman Jim Patterson

2014 Business Plan RECORD DETAIL

Record Date : 4/7/2014
Submission Date : 4/7/2014
Affiliation Type : Individual
Interest As : Individual
Submission Method : Letter
First Name : Alain
Last Name : Enthoven
Business/Organization : Graduate School of Business, Stanford University
City :
County :
Zip Code : 00000
Stakeholder Comments/Issues :
Draft Business Plan Comment Type :
Attachments : Enthoven.BP.040414.pdf (57 kb)
Inappropriate Use Of Cap and Trade.pdf (1 mb)

Mr. Dan Richard, Chairman
California High-Speed Rail Authority
770 L Street, Suite 800
Sacramento, CA 95814

4 April 2014

Subject: Appropriateness of Using Cap and Trade Derived Funds to Finance Construction of the High-Speed Rail Project.

The Draft 2014 Business Plan speaks directly to the proposal to use funds from the Cap and Trade program (AB32) to help finance the high-speed rail project. The Draft document discusses the use of Cap and Trade funds as a source of funding both to help build the First Construction Section (FCS, also the old ICS) and the Initial Operating Segment (IOS). These references appear in:

- The Executive Summary – pages 10, 12, 15, and 16.
- Section 6 of the Draft Plan, "Financial Analysis and Funding", on page 54, goes into the details of the current Budget Plan to provide \$250 Million in FY2014-2015, and a substantial portion of Cap and Trade revenues over the next 6 to 8 years.
- In the Appendix, a May 18, 2012 letter from the Peer Review Group, speaks to the 2012 Revised Business Plan, and discusses the need to consider Cap and Trade funds due to a lack of other sources of funding.

However, none of these references speak to the appropriateness of the use of the Cap and Trade revenues to provide construction funding of the FCS or the IOS, or for that matter any succeeding generation of construction. They view the Cap and Trade program as a source of State funding, nothing more. Missing from the Draft Plan is any argument as to why Cap and Trade funds should be used for High Speed Rail, other than there may not be another, near or long-term source of funding.

The accompanying compendium of four crucial papers, called **Why Cap & Trade Funds Cannot Be Used To Finance High-Speed Rail (HSR) In California**, with its four detailed papers speaks directly to the issue of the appropriateness of the use of these funds. This is a very important perspective that needs to be included in the Plan, since one of the key audiences for the final 2014 Plan is the Legislature, which must deal with decisions around allocating Cap and Trade revenues.

The first of the papers is grounded in the science and economics of greenhouse gas (GHG), the first paper explores the quagmire of false promises and GHG savings the high-speed train system proposes. In the second, two attorneys document that AB32's auction proceeds must be used *"to facilitate the achievement of reductions of greenhouse gas emissions in [California]"* a goal which the project does not accomplish. A third attorney shows how skewed and fallacious the California High-Speed Rail Authority's attempt to justify using only

the first 29 miles of construction as the GHG benchmark, versus the entire 800-mile system. The final paper demonstrates that even if Cap & Trade were used to finance high-speed rail construction, it would fill a miniscule 1% (one percent) of the funding gap that currently exists. This point was reinforced by the Peer Review Group's Chairman's testimony a week ago in a CA Senate hearing that the proposed formula Cap & Trade legislation would still leave a \$15 Billion gap in construction funding for the IOS.

These papers are crucial to the debate on the appropriateness of the use of Cap and Trade funds and should be considered key in the amended and final version of the Authority's 2014 Business Plan.

A handwritten signature in black ink, reading "Alain Enthoven". The signature is fluid and cursive, with the first name "Alain" and last name "Enthoven" clearly distinguishable.

Alain C. Enthoven
Marriner S. Eccles Professor of Public and Private Management (Emeritus),
Graduate School of Business,
Stanford University

Why Cap & Trade Funds Cannot Be Used To Finance High-Speed Rail In California

Four Crucial Briefing Papers

April 2 2014

This paper regarding California's proposed high-speed rail project can be found at:
<https://sites.google.com/site/hsrcaliffr/home/3-1-briefing-paper---2014-plan/2-04-2014-analysis-of-cap-and-trade>

Additional reports on California's proposed high-speed rail project can be found at:
<https://www.sites.google.com/site/hsrcaliffr/>

Introduction & Overview To The Four Papers

Introduction: The Governor's FY 2014-15 budget requests \$250 million of Cap & Trade auction proceeds, and a third of all those proceeds thereafter to help finance the construction of California's high-speed rail (HSR) project.

As of early 2014, federal grants are close to being extinguished unless the State finds funds to match spent federal dollars. But with funds from the sale of Proposition 1A (Prop1A) funds denied the California High-Speed Rail Authority (CHSRA) because of court rulings, (now in the appeals process) it seems to many that funds from California's Cap & Trade auctions may be the sole funding source to continue the project.

The history of AB32, the legislative context of Cap & Trade funds, is rocky. After several court challenges, AB32 became law in 2006. Then-Speaker of the California Assembly, Fabian Nunez, authored AB32. During deliberations he stated the bill's intent.

*"AB32 authorizes the California ARB [Air Resources Board] to adopt a schedule of fees to pay for the direct costs of administering the reporting and emission reduction and compliance programs established pursuant to the bill's provisions. IT IS MY INTENT THAT ANY FUNDS PROVIDED BY HEALTH AND SAFETY CODE SECTION 38597 **ARE TO BE USED SOLELY FOR THE DIRECT COSTS INCURRED IN ADMINISTERING THIS DIVISION.**" [Emphasis added]*

The use of Cap & Trade funds to finance the construction of the HSR project has been highly controversial, not just with the 'environmental community' but also with the LAO in 2012 and 2014, as well as with scholars who question the environmentally-friendliness of high-speed rail. Using Cap & Trade funds to construct the high-speed rail project may also be illegal. It was seen to be controversial in 2012 when the Legislature resisted Governor Brown's first attempt to divert Cap & Trade to the HSR project, and it is controversial now.

Overview: Because the issue is far from settled, four authors submitted papers about using Cap & Trade funds to build the high-speed rail project. They are:

Paper 1 – The Reason Foundation's paper by Wendell Cox and Adrian Moore, **California High Speed Rail Project Greenhouse Gas (GHG) Emissions: A Dynamic Impact and Cost Analysis**, analyzes the State's mandate, and the science of and the unverified data on which High-Speed Rail Authority claims its proposed system's environmental benefits. They point out that AB32 includes a cap and trade program and requires greenhouse gas emissions (GHG) be reduced 80%, to be at 1990 levels, by 2050. In February 2014, the California Air Resources Board (CARB) reported

that to achieve the 2050 target requires acceleration of annual GHG emission reductions at more than double the rate necessary to achieve the interim 2020 targets. High-speed rail (HSR) construction will create substantial GHG. HSR, which is forecasted to begin operations in 2022, cannot reduce GHG emissions before AB32's 2020 horizon and the project's construction must purchase credits through the cap and trade program. Very high passenger load factors may reduce overall GHG emissions. Cost effective GHG reduction is paramount to maintaining economic growth and not passing on AB32's costs to the disadvantaged. Based on four scenarios for 2040 from the 2014 Draft Plan, using high-speed rail (HSR) to reduce GHG emissions would be far more expensive per ton than alternatives, and range from 90 to 1,400 times the cost of cheaper carbon offsets.

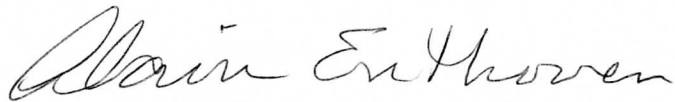
Paper 2 – Attorneys Birkey and Purvis' memorandum, the **Legality of Use of Cap-and-Trade Auction Proceeds to Fund High-Speed Rail**, outlines the goal of reducing GHG emissions statewide to 1990 levels, details the statutory requirements that Cap & Trade auction proceeds must be used to advance the goals of AB32, and that Health and Safety Code section 39712 plainly requires that AB32's auction proceeds must be used *"to facilitate the achievement of reductions of greenhouse gas emissions in [California] consistent with"* AB32. These esteemed attorneys then show why funding high-speed rail will not further the purposes of AB32. They finish with an analysis of why the use of Cap & Trade funds is a poor investment as a means to fund the high-speed rail project.

Paper 3 – Transportation Solutions Defense and Education Fund's President, David Schonbrunn, prepared an **Analysis of the CHSRA's GHG Report**, the California High-Speed Rail Authority's attempt to justify using the Cap & Trade funds. Schonbrunn argues that the entire approach is fallacious because it does not address here-and-now questions with facts, nor environmental impacts after construction of the first 29 miles. Rather the CHSRA report says, *"As the project moves forward, direct GHG emissions calculations will be carried out for each subsequent construction package."* He also points out there is no substantive or quantitative data on GHG emissions or their reductions, and no evidence to support CHSRA's contentions that by using renewable energy sources during construction, planting trees and supporting public transport the project will reduce GHG. These assertions are a *deus ex machina*, without foundation and inserted during the last minutes in the argument about using Cap & Trade funds.

Paper 4 – Mr. Mark Powell's paper, **The History and Status of The California High-Speed Rail Authority's Unlawful Funding Plan**, presents the context of funding the project using Cap & Trade monies. It details the evolution of high-speed rail funding approaches from the 1990s onwards. It shows how the CHSRA, ignoring directives to find ways of using sales or fuel taxes to fund the project's construction instead gambled that massive federal grants, coupled with Prop1A matching fund obligations,

would deflect criticism of the costs. That gamble failed. Federal funds have been limited to a single FY2010 grant and the nation's largest ARRA grants. The Department of Transportation (DOT) has not put new money into the California project for four fiscal years. The private sector has never put money in the project. Neither source is likely to in the future. Powell's paper closes by showing that the Governor's proposal would provide an infinitesimally small proportion of what is needed to continue constructing. Relying on Cap & Trade to fill the gap is foolish.

These papers represent a wide spectrum of practical and legal reasons that must be considered by decision makers during the debate over the use of Cap & Trade funds to partially finance California's proposed high-speed rail project. We thank the contributors for volunteering their time to prepare the papers and urge all readers to consider their arguments.

A handwritten signature in cursive script, reading "Alain Enthoven". The signature is fluid and elegant, with the first name "Alain" being more prominent than the last name "Enthoven".

Alain C. Enthoven
Marriner S. Eccles Professor of Public and Private Management (Emeritus),
Graduate School of Business,
Stanford University

Paper 1

California High Speed Rail Project Greenhouse Gas (GHG) Emissions: A Dynamic Impact and Cost Analysis

Wendell Cox and Adrian Moore

The Reason Foundation

California High Speed Rail Project
Greenhouse Gas (GHG) Emissions: A Dynamic Impact and Cost Analysis

By Wendell Cox
Project Director: Dr. Adrian Moore

EXECUTIVE SUMMARY

California has established one of the most aggressive greenhouse gas (GHG) emissions reduction policies in the world. Under Assembly Bill 32 (AB32) and Governor Schwarzenegger's Executive Order number S-3-05, the state has adopted a cap and trade program to reduce GHG emissions and a requirement to reduce GHG emissions 80 percent between 1990 and 2050. The state proposes to build a high-speed rail line one objective of which is to reduce GHG emissions. This report evaluates the extent to which any GHG reduction from this proposed new rail line would arise and to put these into context, comparing the cost of such emission reductions with alternatives.

General Conclusion: It is generally concluded that high speed rail is an ineffective and expensive strategy for reducing GHG emissions. Under each of the scenarios examined in this report, high-speed rail would be many times more expensive per tonne of GHG emissions reduction than other alternatives, ranging from 75 times to 1,400 times the cost of carbon offsets. High-speed rail not only fails to advance the purposes of AB32, but it also retards the purposes of state law and policy by inefficiently consuming funding that could be used to obtain far greater GHG emission reductions.

1. Background

The California high speed rail line would operate from San Francisco to Los Angeles over both genuine high-speed rail and commuter rail right-of-way. The low option cost estimate is approximately \$68 billion (in year of expenditure dollars), although the state is far short of the funding needed to complete the line. The Brown administration has proposed using cap and trade funds to support construction of the line.

2. California Greenhouse Gas Emission Policy

California's GHG emissions reduction policies are based on objectives set in Assembly Bill 32 (AB32) and an executive order by Governor Schwarzenegger. AB32 sets an objective to reduce California's GHG emissions to 1990 levels by 2020. Ultimately, the policies require that GHG emissions in the state be reduced 80 percent from 1990 levels by 2050. A number of strategies have already been adopted, such as a cap and trade program and the "zero emission vehicle" (ZEV) program.

It will be challenging to meet the 2050 goal. The California Air Resources Board (CARB) indicates that a substantial acceleration of annual GHG reductions will be required between 2020 and 2050.

3. The CHSRA High Speed Rail GHG Emissions Reduction Forecast

Under certain circumstances, high-speed rail reduces GHG emissions by shifting people from other modes of transport, including cars and airliners. These modes of travel rely on fossil fuels, which produce substantially more in GHG emissions per unit of consumption (a mile traveled by a rail passenger, airline

passenger or vehicle driver) than the electricity generated to power high-speed rail trains, when those trains are at sufficient capacity. The construction of high-speed rail lines produces GHG emissions, which are usually offset over a period of time by the reductions from the transfer of highway and airliner passenger demand.

The California High Speed Rail Authority (CHSRA) has estimated that high-speed rail will reduce statewide GHG emissions by between 1.15 and 1.85 million metric tonnes annually by 2035. However, these estimates are likely high, due at least in part to the treatment of GHG emissions from electricity generation to power the trains and out-of-date assumptions with respect to light vehicle (automobile and light truck) fuel economy.

In addition, high-speed rail passenger projections have routinely been overly optimistic and the projections of CHSRA have been similarly criticized as being too high. Any over projection of ridership would also cause the GHG emissions reduction forecast to be high because there would be a smaller reduction in light vehicle and airliner use.

The Need for Dynamic Forecasting: Finally, and most importantly, California's policy environment could render any conventional GHG emission reduction forecast to be grossly over-optimistic. Conventional forecasting, such as performed by CHSRA, takes account of only already adopted measures and is thus "static." Yet the measures that have been formally adopted will be, according to CARB, insufficient to achieve the 2050 GHG emissions reduction objective. Indeed, assuming that California achieves its objectives, the high speed rail advantage over light vehicles in GHG emissions reductions will be virtually eliminated by 2040 (the horizon year used in this analysis). Static forecasts (such as the present CHSRA forecast) are virtually irrelevant, because CARB is obligated to adopt sufficient measures to meet the GHG emissions reduction objectives. There is a need for "dynamic" forecasting that includes the required GHG emissions reductions.

4. Alternative GHG Emissions Reduction Forecasts

This report develops alternative GHG emissions reduction forecasts, under two categories ("Dynamic Forecasts" and "Static Forecasts") for the horizon year of 2040.

Dynamic Forecasts: The Dynamic Forecasts assume that California will achieve its 2050 GHG emissions reduction objective and will be on a trajectory toward that achievement in 2040. The scenarios assume the adoption of specific strategies, already some already suggested by CARB that would achieve the target.

Static Forecasts: The Static Forecasts assume specific strategies that have already been adopted. Because these strategies are insufficient to produce the GHG emissions reductions required by California law and policy, each of the Static Forecasts would produce GHG emissions reductions that are likely to be far greater than will actually occur because light vehicle emissions are likely to be radically reduced by anticipated CARB policies (which is indicated in the Dynamic Forecasts).

Three scenarios are presented for each category, as indicated in Table ES-1.

Table ES-1 California High Speed Rail GHG Emission Reduction Scenarios	
DYNAMIC FORECASTS	
Assumptions	Adoption of additional specific strategies necessary to achieve California's 2050 GHG emission reduction objective.
Implication	That the state will achieve its 2050 GHG emissions objective and will be on a trajectory to achievement in 2040
SCENARIOS	A-1: CHSRA (Scenario [B-1] adjusted for California 2050 policies): Insufficient Information
	A-2: Adjusted CHSRA (Scenario [B-1] adjusted for California 2050 policies)
	A-3: International Experience (Scenario [B-1] adjusted for California 2050 policies)
STATIC FORECASTS	
Assumptions	Impacts of legally binding strategies that have been adopted by government agencies.
Implication	That the state will fall far short of achieving its 2050 GHG emissions reduction objective.
SCENARIOS	B-1: CHSRA (CHSRA midpoint ridership forecast with CHSRA GHG emissions reduction forecast)
	B-2: Adjusted CHSRA (CHSRA midpoint ridership forecast with independent GHG emissions reduction forecast)
	B-3: : International Experience (International ridership forecast & independent GHG emissions reduction forecast)

A model was developed to forecast the GHG emissions using the 2040 ridership projections in the *2014 Business Plan* and data from government sources.

GHG emission reductions from high speed rail range are forecast at from 0.12 million to 0.25 million tonnes annually in 2040 under the Dynamic Forecasts. This compares to the CHSRA static forecast reduction of 1.54 million tonnes. Under the other static forecasts, reductions of from 0.29 million to 0.59 million tonnes would occur (Table ES-2).

Table ES-2 Greenhouse Gas Emission Reductions from High Speed Rail: 2040			
Scenarios	CHSRA	Adjusted CHSRA	International Experience
Dynamic Forecasts	Insufficient Information	-0.25	-0.12
Static Forecasts	-1.54	-0.59	-0.29
In millions of metric tonnes			
Phase 1 Blended System			
Construction GHGs not considered due to lack of data.			
Sources: CHSRA and author's calculations			

5. Cost Effectiveness of High Speed Rail GHG Emissions Reductions

To minimize disruption of the economy and economic growth, major public policy program (such as California's GHG emissions reduction program) should be cost-effective, so that the standard of living is not retarded and poverty is not increased. The importance of cost effectiveness in reducing GHG emissions has been stressed by many, including CARB.

The principal metric is the cost per ton of GHG emissions reduction. Currently, the market price of carbon credits, which corresponds to a ton of GHG emission reduction, is approximately \$13 per ton (such as for tree planting programs or airline GHG offsets). Some strategies are far more cost effective than carbon offsets. Vehicle fuel economy improvement programs by the Environmental Protection Agency and CARB have indicated *negative costs of up to \$300 per tonne*.

The forecast cost per ton of GHG emissions reduction by high-speed rail range from \$7,100 to \$18,600 under the Dynamic Forecasts and \$1,000 to \$8,000 under the Static Forecasts (Table ES-3).

Table ES-3			
Cost per Metric Tonne of Greenhouse Gas Emission Reductions from High Speed Rail: 2040 (2013\$)			
Low Capital Cost Option	CHSRA	Adjusted CHSRA	International Experience
Dynamic Forecasts	Insufficient Information	\$ 7,100	\$ 15,700
Static Forecasts	\$ 1,000	\$ 3,000	\$ 6,800
2013\$			
High Capital Cost Option	CHSRA	Adjusted CHSRA	International Experience
Dynamic Forecasts	Insufficient Information	\$ 8,500	\$ 18,600
Static Forecasts	\$ 1,300	\$ 3,700	\$ 8,000
2013\$			
Construction GHGs not considered due to lack of data.			
Sources: CHSRA and author's calculations			

6. Prioritizing GHG Emissions Reduction Strategies

The Legislative Analyst's Office has stressed the importance of prioritizing high-speed rail relative to other alternatives for GHG emissions reductions as a prerequisite to the use of cap and trade funding.

Under each of the scenarios, high-speed rail would be many times more expensive per tonne of GHG emissions reduction than other alternatives, ranging from 75 times to 1,400 times the cost of carbon offsets. For example, \$250 million carbon offsets to abate GHG emissions are nearly equal to the required AB32 statewide reduction from all sources in 2020 compared to 2011. To state the issue in terms similar to CHSRA in its GHG emissions reduction report, \$250 million could purchase carbon credits equal to taking all of the light vehicles in the San Francisco and San Jose metropolitan areas off the road for a year (with GHG reductions that would be achieved before the 2020 AB32 deadline). High-speed rail not only fails to advance the purposes of AB32, but it also retards its purposes by inefficiently consuming funding that could be used to obtain far greater GHG emission reductions.

The longer run cost intensity is illustrated by applying the minimum high speed rail 2040 costs per tonne (CHSRA Scenario [B-1]) to the required state policy that 2050 GHG emissions be 80 percent of 1990 emission levels. If the average cost per tonne of GHG emission reduction in 2050 were equal to the projected cost per tonne of reductions via high speed rail, the total cost would be, approximately \$350 billion (in 2013\$), an amount equal to 1/7 the present size of California's gross domestic product (GDP). Under the more likely "Dynamic Forecast: International Ridership Scenario" (A-3) the cost could be up to \$6.2 trillion (in 2013\$). This is up to three times the size of California's GDP, larger than the GDP of Japan and larger than the GDPs of all countries in the world except for the United States and China in 2013.

Moreover, any GHG emissions reduction advantage of high speed rail would be fleeting. By 2040, much of the high speed rail advantage in GHG emissions relative to cars would have been eliminated by vehicle fuel economy improvements, under CARB plans. In the decade that follows, the gap would be further narrowed. By the 2060 long term horizon considered in the *2014 Business Plan*, any contribution by high speed rail toward lower GHG emissions may have been lost.

Further, diversion of cap and trade revenues for insufficiently cost effective GHG emissions reduction purposes could have political consequences. Support for the statewide GHG emissions reduction program could be diluted as it becomes clear that it is subject to political whim. Further, the failure to resolutely direct cap and trade revenues only to the most cost effective uses could further retard the state's business climate by indicating a lack of sufficient financial responsibility.

7. The Imperative for Cost-Effectiveness and Realism

High-speed rail would contribute only minimally to the reduction of GHG emissions, and its impact would be only temporary. These emissions reductions would require an exorbitant expenditure compared to other alternatives and would seem to betray a lack of seriousness with respect to GHG emissions reduction.

These expenditures would foreclose far more cost-effective approaches , unnecessarily restricting government options to maintain and improve public services. They would also reduce funding available for expanded business investment that could lead to greater economic growth, higher standard of living, and lower levels of poverty. In short, high-speed rail, both in terms of the present proposal to use cap and trade revenues and the longer term, retards the ability of the state to achieve its GHG emissions reduction objectives.

8. Legality of Cap and Trade Funding for High Speed Rail

Questions have also been raised about the legality of using cap and trade funding for high-speed rail, which has been proposed. These include a concern that high-speed rail does not serve the objectives of AB32, because it would not reduce GHG emissions before the 2020 AB32 deadline. Further, the Legislative Counsel has indicated concern that cap and trade revenues, as mitigation fees, may not be legally spent on high speed rail.

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7. The Imperative for Cost-Effectiveness and Realism

8. Legality of Cap and Trade Funding for High Speed Rail

Appendix A: Methodology

Appendix B: Appendix Tables

1. BACKGROUND

California has established one of the most aggressive greenhouse gas (GHG) emissions reduction policies in the world. Under Assembly Bill 32 (AB32) and Governor Schwarzenegger's Executive Order #S-3-05, the state has adopted a cap and trade program to reduce GHG emissions and a requirement to reduce GHG emissions 80 percent between 1990 and 2050. At the same time, the state proposes to build a high-speed rail line that would purportedly materially contribute GHG emissions reduction.

1.1 The California High Speed Rail Proposal

The California high speed rail Phase 1 Blended system is planned to operate over a genuinely high speed rail right of way for most of its route, while sharing track with commuter railways on the approaches to the northern and southern terminals (Los Angeles Union Station and San Francisco's Transbay Terminal).

Phase 1 Blended system operations would begin in 2029, offering "one-seat" service over the commuter rail and high speed rail right of way between San Francisco and Los Angeles. Travelers to and from Orange County (Anaheim) would have use Metrolink commuter trains to and from Union Station, where they would transfer between the two services.

Greenhouse Gas Emissions

One of the principal selling points of the California High Speed Rail project is its expected contribution to reducing greenhouse gas (GHG) emissions. The California High Speed Rail Authority CHSRA provided estimates of expected GHG emissions reductions in June 2013.¹ In its first year of operations, high-speed rail would reduce GHG emissions by the same amount as removing 31,000 cars from the road, which CHSRA indicated stretch for 100 miles on a single highway lane. By 2035, CHSRA indicated that an annual reduction of between 1.15 and 1.85 million metric tonnes² of GHG emissions would be achieved by operating high-speed rail.

Some travel by highway and airliners would be transferred to the high-speed rail system. Since the high-speed rail trains generally produce lower levels of GHG emissions per mile traveled than automobiles and airliners, it is expected that GHG emissions will be reduced. However, construction of the high-speed rail line will increase GHG emissions.

1.2 Costs and Funding

The *2012 Draft Revised Business Plan* projected the cost of the project at between \$68.4 billion and \$79.7 billion in "year of expenditure" dollars.³ The low cost option has been revised to \$67.6 billion in the *2014 Business Plan*.⁴ Over the past two years, most of the attention with respect to costs has been on the low-

¹ California High Speed Rail Authority (June 2013), *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels*.

http://www.hsr.ca.gov/docs/programs/green_practices/HSR_Reducing_CA_GHG_Emissions_2013.pdf.

² At 2,205 pounds, a metric tonne is 1.10 times the weight of a short ton (2,000 pounds), which is more commonly used in the United States. The spelling "tonne" is commonly applied to metric tonnes and is used throughout this report.

³ California High Speed Rail Authority (April 2012), *California High-Speed Rail Program Draft Revised 2012 Business Plan*, http://www.hsr.ca.gov/docs/about/business_plans/FINAL_Draft_2014_Business_Plan.pdf.

⁴ California High Speed Rail Authority (February 2014), *2014 Business Plan*, http://www.hsr.ca.gov/docs/about/business_plans/FINAL_Draft_2014_Business_Plan.pdf

cost option, yet the project itself has experienced substantial cost escalation already.⁵ Further, megaprojects tend to experience substantial cost escalation.⁶ Failure to consider the higher figure could be risky to the state and its taxpayers.

The low-cost option would cost \$54.9 billion in inflation adjusted dollars (2013\$). It is assumed that the high-cost option cost would remain proportional to its 17 percent higher relationship from the *2012 Business Plan*, at \$64.1 billion. For clarity, this report uses constant dollar costs, expressed in 2013 dollars. The high-speed rail system faces severe funding challenges and is far short of the financial commitments required to complete the Phase 1 Blended System.

The Brown Administration has proposed using \$250 million in Assembly Bill (AB32)⁷ cap and trade revenues from the 2014 – 2015 budget to support construction of the proposed California high speed rail project. In addition, the Administration has indicated that cap and trade funds should become an even larger share of high-speed rail funding in the future.⁸

There are considerable difficulties with this proposal. Perhaps the most important is whether AB32 cap and trade funds can be legally used for high-speed rail. It is generally agreed that high-speed rail cannot reduce GHG emissions before the 2020 horizon in AB32. Yet, the Brown Administration believes that GHG reduction from high-speed rail is so important as to justify the expenditure of cap and trade revenues. The legal issues are covered extensively by the Legislative Analyst's Office and a short summary is provided in Appendix A.

The focus of this report is a public policy evaluation of the effectiveness of high speed rail as a means for GHG emission reductions. The high priority the GHG emission reductions have received in both California legislation and policy requires that mitigation strategies be cost effective. Thus far, there has been no state or California High Speed Rail Authority GHG cost-effectiveness analysis. As the Legislative Analyst's Office has indicated, GHG emissions reduction strategies should be subjected to a consistent cost metric. This report provides an "out – of – pocket" estimate of the cost per ton of GHG emission reduction by high-speed rail. The calculations generally follow the McKinsey Corporation greenhouse gas emissions cost curve methodology.⁹ The principal time horizon is 2040, the end of the first decade with full service and the year for which detailed ridership data was provided by CHSRA in its *2014 Business Plan*.

This report principally relies on state documents, especially from CHSRA and the California Air Resources Board. Reports from outside the CHSRA (such as from CARB and the EPA) are taken at face value, with no attempt to evaluate their findings.

⁵ Joseph Vranich & Wendell Cox, "California High Speed Rail: An Updated Due Diligence Report," Reason Foundation (2013), http://reason.org/files/california_high_speed_rail_report.pdf

⁶ Bent Flyvbjerg, Nils Bruzelius and Werner Rothengatter, *Megaprojects and Risk: An Anatomy of Ambition*, (Cambridge, UK: Cambridge University Press, 2003)

⁷ The Global Warming Solutions Act.

⁸ Chris Megerian and Ralph Vartabedian (February 24, 2014), "Gov. Jerry Brown wants polluters' fees to help fund high-speed rail," <http://www.latimes.com/local/la-me-brown-rail-20140228,0,4977021.story#ixzz2ubyMC1e8>.

⁹ Calculated as the annual operating and capital cost, minus expected cost savings (especially from reduced energy consumption) divided by the metric tonnes of greenhouse gas emissions avoided. See: Per-Anders Enkvist, Tomas Nauclear and Jerker Rosander (2007, Number 1), "A cost curve for greenhouse gas reduction," *McKinsey Quarterly*, http://www.epa.gov/oar/caaac/coaltech/2007_05_mckinsey.pdfhttp://www.epa.gov/oar/caaac/coaltech/2007_05_mckinsey.pdf

2. CALIFORNIA GREENHOUSE GAS EMISSION REDUCTION POLICY

California has established aggressive goals for GHG emissions reductions, which require an 80% reduction in GHG emissions by 2050. Achievement of an 80% reduction in GHG emissions by 2050 will be challenging.

Trajectory to 2050: A recent CARB commissioned¹⁰ report reviewed three scenarios for 2050 and found that none achieved the 80 percent statewide GHG emissions reduction target. The scenarios included current policies, uncommitted GHG emissions reduction targets, and technological advances.

In its recently published *Proposed First Update to the Climate Change Scoping Plan: Building on the Framework (February 2014 Scoping Plan)*, the California Air Resources Board (CARB) noted that to achieve the 2050 80 percent reduction target would require acceleration of annual GHG emission reductions at more than double the rate that has been necessary to achieve the 2020 targets.¹¹ CARB has laid out a number of policy options for strengthening GHG emissions reductions to achieve both an interim target for 2030 and the 80 percent reduction target for 2050. Figure 1 in CARB's *Vision for Cleaner Air*¹² indicates the extent of GHG emissions reduction and trend by 2050 that it seeks to meet the California objectives. The dark section of the chart represents Gasoline, Diesel and Natural Gas. The lighter section of the chart represents Hydrogen, Electricity, and Jet Fuel.

¹⁰ Jeffery B. Greenblatt (20120, "Estimating Policy-Driven Greenhouse Gas Emissions Trajectories in California: The California Greenhouse Gas Inventory Spreadsheet (GHGIS) Model, Ernesto Orlando Lawrence Berkeley National Laboratory <http://eetd.lbl.gov/sites/all/files/lbnl-6451e.pdf>.

¹¹ California Air Resources Board (2014), *Proposed First Update to the Climate Change Scoping Plan: Building on the Framework (February 2014 Scoping Plan)*, http://www.arb.ca.gov/cc/scopingplan/2013_update/draft_proposed_first_update.pdf

¹² California Air Resources Board, *Vision for Cleaner Air*, <http://www.arb.ca.gov/planning/vision/vision.htm> and http://www.arb.ca.gov/planning/vision/docs/draft_scenario_assumptions_and_results_appendix.pdf and http://www.arb.ca.gov/planning/vision/docs/vision_for_clean_air_public_review_draft.pdf

CARB Scenario 2 Vision 2010 TO 2040

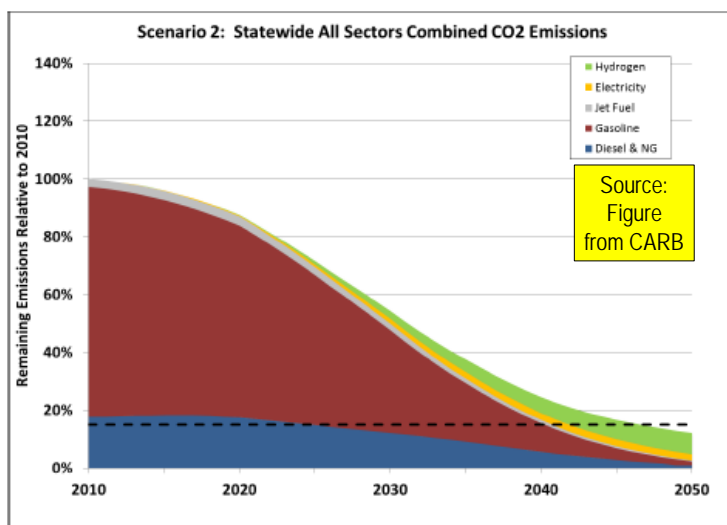


Figure 1

It will be challenging to meet these objectives. Any attempt to meet such targets should be prioritized by cost-effectiveness, which would coincidentally ensure that any negative impact on economic growth would be minimized. This would, consequently, limit any reduction in the standard of living and increase in the poverty rate.¹³

Regulations: Present and Future: Certain CARB and federal regulations are appropriate to an analysis of GHG emissions relating to high-speed rail. The principal source of reductions from high-speed rail would be the difference in GHG emissions per unit of passenger consumption ("passenger mile") between the train and alternative forms of travel, principally automobiles and airliners. Today, automobiles and airliners produce more GHG emissions per passenger mile than high-speed rail is expected to produce.

Regulations have been adopted to materially improve fuel economy for new light vehicles. By 2025, EPA regulations require the average new car to achieve 54.5 miles per gallon. Fuel economy improvements have a one to one relationship between motor fuel consumed and GHG emissions reductions --- each gallon of gasoline combusted produces the same volume of GHG emissions.

In addition, CARB has adopted a Low Carbon Fuel Standard (LCFS), which essentially requires a 10 percent reduction in GHG emissions from fuels (in addition to the improvement in fuel economy).

Perhaps the most significant CARB regulation authorizes the "zero emission vehicle" (ZEV). Beginning in 2017, two percent of light vehicles sold must be ZEVs. This rises to 16 percent in 2025. Substantial strengthening of the regulation is anticipated according to CARB:¹⁴

¹³ California has the highest poverty rate in the United States, adjusted for housing costs, according to the US Bureau of the Census.

¹⁴ California Air Resources Board (2014), *Proposed First Update to the Climate Change Scoping Plan: Building on the Framework (February 2014 Scoping Plan)*, http://www.arb.ca.gov/cc/scopingplan/2013_update/draft_proposed_first_update.pdf

Achieving our long-term climate goal and 2032 ozone standards will require a much deeper penetration of ZEVs into the fleet. As outlined in the 2009 ZEV Review and the 2012 Vision for Clean Air, and several independent studies (See Chapter III), the light-duty vehicle segment will need to become largely electrified by 2050 in order to meet California's emission reduction goals.

CARB documentation indicates that 87 percent of the light vehicle fleet in the state will be ZEV vehicles by 2050.¹⁵ Virtually 100 percent of vehicles in the state would be ZEVs at some point during the following decade (Figure 2). CARB also recommends increasing the LCFS to between 15 and 20 percent in the future.¹⁶

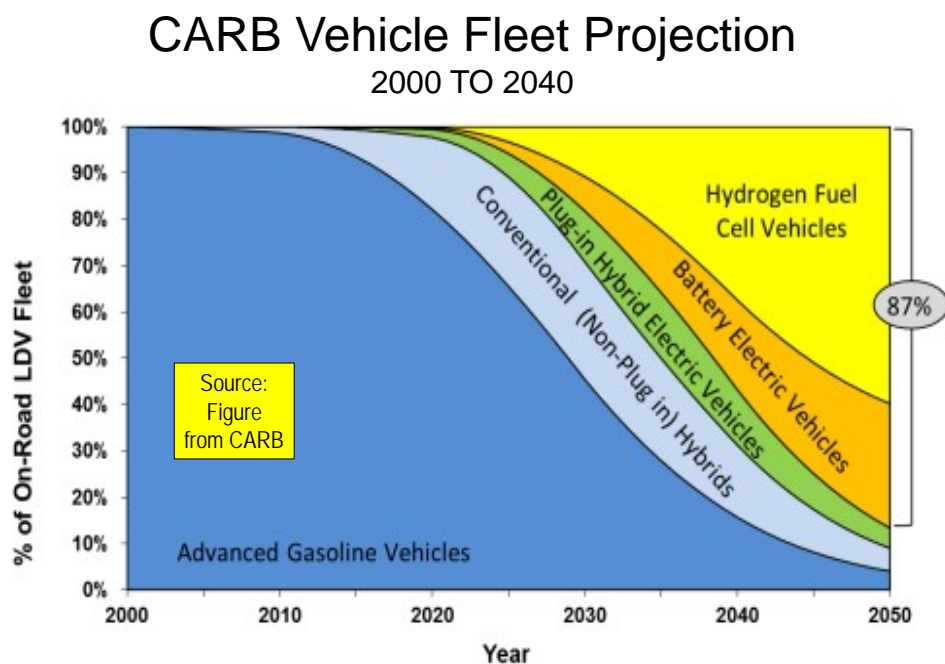


Figure 2

3. THE CHSRA HIGH SPEED RAIL GHG EMISSIONS REDUCTION FORECAST

Generally, the international transportation literature indicates that high-speed rail results in a reduction of GHG emissions compared to driving and from airline operations, if there is a sufficient diversion of demand. This is because GHG emissions from cars and airline operations are higher per passenger mile (miles traveled by a passenger) than from high speed rail, which can spread a train's emissions over a lot of passengers. High speed rail GHG emissions are produced by the generation of electricity to power the trains, supportive functions (station operations and construction).

¹⁵ California Air Resources Board, Public Hearing to Consider Advanced Clean Cars Program, <http://www.arb.ca.gov/board/books/2012/012612/12-1-2pres.pdf>.

¹⁶ California Air Resources Board (2014), *Proposed First Update to the Climate Change Scoping Plan: Building on the Framework (February 2014 Scoping Plan)*, http://www.arb.ca.gov/cc/scopingplan/2013_update/draft_proposed_first_update.pdf

In addition to the GHG that occur from attracting riders from cars and planes, high-speed rail itself produces GHG emissions during construction. It is generally assumed that the GHG emissions produced during construction will be recovered by greater GHG emissions reductions that occur from operating the high-speed rail system.

3.1 GHG Emissions from Construction

Construction activity GHG emissions estimates have varied significantly. One independent report indicated that it could take up to 70 years to offset the construction related GHG emissions with the anticipated GHG emissions reductions from operating trains.¹⁷ The California high-Speed Rail Authority has estimated that construction GHG emissions would be offset by GHG reductions from operations 2.8 years over the Fresno to Bakersfield segment.¹⁸

The Legislative Analyst's Office expects that a longer period will be required to recover the construction activity GHG emissions increases.¹⁹

...an independent study found that—if the high-speed rail system met its ridership targets and renewable electricity commitments—construction and operation of the system would emit more GHG emissions than it would reduce for approximately the first 30 years.

CHSRA intends to offset the GHG emissions additions by purchasing carbon credits through a tree planting program. Because of insufficient CHSRA documentation, construction GHG emissions are not evaluated further in this report.

3.2 GHG Emissions from Operations

CHSRA has indicated high speed rail operations will reduce GHG emissions from 1.15 to 1.85 million tonnes per year by 2035,²⁰ after the Phase 1 Blended System has been in operation for six years. By 2050, the reduction would be between 1.24 and 1.99 million tonnes per year. This report uses the year 2040 for its analysis of GHG emissions impacts. The year 2040 is used for analysis because corresponding ridership data was provided in the *2014 Business Plan*.²¹ Based on the 2035 and 2050 CHSRA forecasts, the corresponding GHG emissions reduction range for 2040 would be approximately 1.18 million to 1.90 million tonnes per year.

3.3 Analysis of the CHSRA GHG Emissions Reduction Projections

CHSRA provides only a summary description of the method used in its projection of GHG emissions reductions from operations. This makes a detailed analysis of the CHSRA GHG emissions reduction

¹⁷ Mikhail Chester and Arpad Horvath (2010), *Life-Cycle Environmental Assessment of California High Speed Rail*, Access.

¹⁸ California High Speed Rail Authority, *Draft Environmental Impact Report/Statement: Fresno to Bakersfield*, Table 3.3-17, http://www.hsr.ca.gov/docs/programs/fresno-baker-eir/drft_EIR_FresBaker_Vol1_3_3.pdf

¹⁹ Legislative Analyst's Office, *The 2012-13 Budget: Funding Requests for High-Speed Rail*, <http://www.lao.ca.gov/analysis/2012/transportation/high-speed-rail-041712.aspx>

²⁰ Previously, CHSRA had projected that the Phase 1 Blended System would reduce GHG emissions 4.8 million tonnes (Table 3.3-13, CHSRA, *Draft Environmental Impact Report/Statement: Fresno to Bakersfield*, http://www.hsr.ca.gov/docs/programs/fresno-baker-eir/drft_EIR_FresBaker_Vol1_3_3.pdf).

²¹ The ridership projections in the *2014 Business Plan* is provided between major regions (such as the San Francisco Bay Area, Southern California, and the San Joaquin Valley), although not specifically between stations.

projection impossible. Even with the limited information, there are indications of concerns that could have resulted in the GHG emissions reduction projections being high.

GHG Emissions from Electricity Production: The GHG emissions reduction forecasts may be overly optimistic from treatment of GHG emissions production from electricity generation. CHSRA indicated plans to purchase only electricity that is produced with renewable resources. Renewable resources generally produce lower levels of GHG emissions than fossil fuels.²²

*... the assumption for power emissions is that the Authority has purchased a renewable power mix of 20 percent solar, 40 percent wind, 35 percent geothermal, and 5 percent biogas converted to electricity.*²³

Yet the use of renewable resources would not reduce the GHG emissions of high speed rail to any greater extent than it does any other business or household in the pool of California electricity consumers. Renewable energy is scarce. To the extent that CHSRA uses renewable electricity, it is likely to preclude such use by others. This suggests that when CHSRA buys renewable electricity the total available electricity supply remains the same, but the renewable portion is allocated differently between users. Any credit taken by CHSRA for renewable power use that exceeds the generation mix in the state, could effectively crowd out consumption by other consumers. GHG emissions from electricity used in the state are reduced only when total emissions are reduced, not when they are reallocated between consumers.

Light Vehicle Emissions: The CHSRA GHG emissions reduction forecast may also be overly optimistic. CHSRA used the CARB EMFAC2011 model to project GHG emissions reductions from light vehicles. The EMFAC2011 model does not include the effect of the new more stringent 2016 to 2025 fuel economy standards adopted by the Obama Administration, which are reflected in the latest US Department of Energy projections.²⁴ This would result in an overstatement of GHG emissions reductions.

However, without a more detailed description of their methodology and data used, CHSRA's GHG emissions reduction forecast cannot be analyzed in detail.

California GHG Emissions Reduction Policy: Further, the CHSRA GHG emissions reduction projections were based on conventional assumptions that include only adopted public policy measures. Under normal circumstances, this would be sufficient. However, the public policy situation in California is unprecedented, with substantial additional policy adoptions virtually assured. As a result, a conventional "static" forecasting approach is likely to produce far higher reductions in GHG emissions than are likely in California's policy environment. A more dynamic forecasting method is thus required, as is described below.

California is strongly committed to reaching an 80 percent reduction in GHG emissions by 2050. It is clear that the California Air Resources Board intends to implement such measures as are necessary to achieve this objective.

The potential progress is indicated in Figure 3, showing projected trends in high speed rail and light vehicle emissions to 2040. Virtually all of high speed rail's advantage relative to ZEV vehicles could be

²² National Renewable Energy Laboratory (January 2013), *Life Cycle Greenhouse Gas Emissions from Electricity Generation*, <http://www.nrel.gov/docs/fy13osti/57187.pdf>.

²³ California High Speed Rail Authority (June 2013), *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels*.

²⁴ US Department of Transportation, Energy Information Administration, *Annual Energy Outlook 2014*.

eliminated at the likely unachievable 85 percent load factor²⁵ forecast by CHSRA. At the lower ridership level indicated in international research, light vehicles could *eliminate* the GHG emissions advantage of high-speed rail per highway mile.²⁶

GHG Emissions: HSR & Light Duty Vehicles

2010 TO 2040

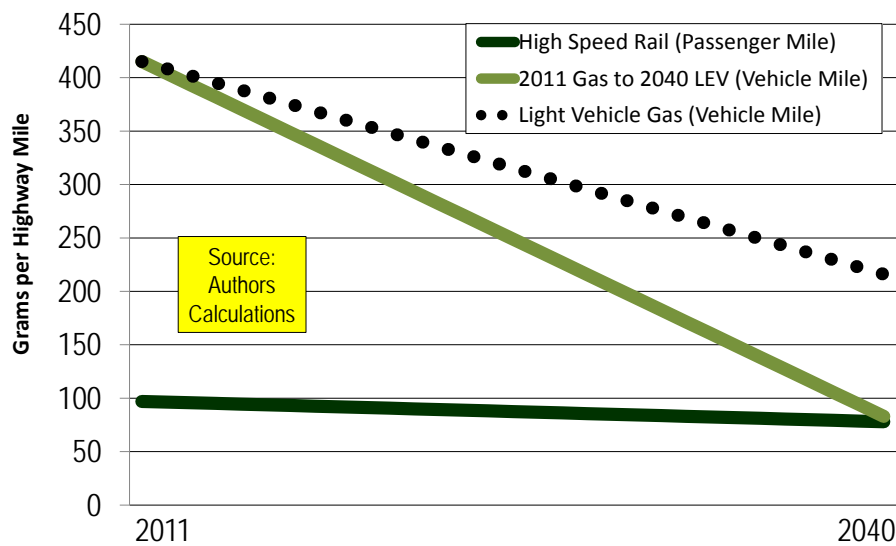


Figure 3

The conventional "static" GHG emissions reduction forecasting method used by CHSRA produces results that imply California will not reach its GHG emissions reductions objectives. Indeed, were the GHG emissions reduction scenario to emerge on which the CHSRA static forecasts are based, ***California's GHG emissions reduction program will have resulted in material failure.*** This is because CHSRA assumes future automobile fuel economy improvements that are far more pessimistic than state policy requires. Dynamic forecasting, on the other hand, assumes that California will reach its policy objectives, which the Brown Administration and CARB are determined to accomplish.

4. ALTERNATIVE GHG EMISSIONS REDUCTION FORECASTS

²⁵ The highly touted Madrid to Barcelona high speed rail line has an average load factor of approximately 60 percent, according to Frontier Economics, Atkins ITS (March 2011), *Appendix I: High Speed Railway Madrid-Barcelona*, European Commission, http://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/expost2006/wpb_cs1_barcelona.pdf. Other high speed rail systems also have considerably lower load factors. See Wendell Cox and Joseph Vranich, *The California High Speed Rail Proposal: A Due Diligence Report* (2008), Reason Foundation, <http://reason.org/files/1b544eba6f1d5f9e8012a8c36676ea7e.pdf>.

²⁶ Highway vehicle mile is used because CHSRA forecasts most of its travelers will have previously traveled by car. High speed rail travel requires longer distances than highway travel (for example, from San Francisco to Los Angeles the highway distance is approximately one-quarter shorter than by high speed rail. For highway travel, the appropriate comparison is highway miles, rather than miles of travel by train. It is conservatively assumed that *all* travelers attracted from cars to high speed rail would be drivers. The airline distance between San Francisco and Los Angeles is approximately one-third shorter than high speed rail). These longer distances increase GHG emissions from high speed rail.

The expected impacts of California's policy initiatives and the tendency of passenger forecasts to the overly optimistic suggest the necessity of alternative GHG emissions reduction forecasts.

4.1 Forecast Categories

Two general categories of forecasts are presented. The first category, "Dynamic Forecasts," is based on the underlying assumption that California will achieve its 2050 GHG emissions reduction target. The second category, "Static Forecasts," is limited to the effects of already adopted measures. These categories and three scenarios within each are illustrated in Table 1.

Table 1 California High Speed Rail GHG Emission Reduction Scenarios	
DYNAMIC FORECASTS	
Assumptions	Adoption of additional specific strategies necessary to achieve California's 2050 GHG emission reduction objective.
Implication	That the state will achieve its 2050 GHG emissions objective and will be on a trajectory to achievement in 2040
SCENARIOS	A-1: CHSRA (Scenario [B-1] adjusted for California 2050 policies): Insufficient Information
	A-2: Adjusted CHSRA (Scenario [B-1] adjusted for California 2050 policies)
	A-3: International Experience (Scenario [B-1] adjusted for California 2050 policies)
STATIC FORECASTS	
Assumptions	Impacts of legally binding strategies that have been adopted by government agencies.
Implication	That the state will fall far short of achieving its 2050 GHG emissions reduction objective.
SCENARIOS	B-1: CHSRA (CHSRA midpoint ridership forecast with CHSRA GHG emissions reduction forecast)
	B-2: Adjusted CHSRA (CHSRA midpoint ridership forecast with independent GHG emissions reduction forecast)
	B-3: : International Experience (International ridership forecast & independent GHG emissions reduction forecast)

A model was developed to estimate the GHG emissions reduction from the lower level light vehicle and airline for which high speed rail travel is substituted. Ridership data is from the CHSRA's *2014 Business Plan*,²⁷ which included updated forecasts between regions of California for 2040.²⁸ Based on these projections, this report provides independent estimates of high speed rail GHG emissions reductions at ridership indicated in the scenarios.

The model estimates the increase in GHG emissions reductions from the electricity generated and transmitted to power the trains,²⁹ other operating functions, such as stations, maintenance facilities and maintaining rail rights of way, as well as the additional light vehicle use that occurs as rail riders travel to stations to meet their trains. The methodology is described in Appendix A.

4.2 Dynamic Forecasts and Results

The Dynamic Forecasts assume that California will achieve its 80 percent GHG emissions reduction by 2050 and will be on a trajectory toward that accomplishment in 2040. Each of the Dynamic Forecasts

²⁷ *2014 Business Plan*

²⁸ Projected ridership between stations is not provided.

²⁹ High speed rail's electricity consumption (and thus its indirect GHG emissions) are increased by its less direct routing. Trains will travel approximately 505 miles from Los Angeles to San Francisco. This compares to a more direct 345 miles by airline and 380 miles by highway.

represents an attempt to replicate the projections in CARB's *Vision for Clean Air*.³⁰ It can be expected that the GHG emissions reductions from high speed rail under the Dynamic Forecasts will be significantly lower than under the Static Forecasts (The methodology is described in Appendix A).

This is because the GHG emissions that occur from light vehicles drop much more rapidly than the emissions from the high-speed rail system, as the conversion to ZEV vehicles continues (Figure 3, above). Once the ultimate ZEV share of the vehicle fleet is achieved, high-speed rail and light vehicle GHG emissions will be similar and can be expected to rise or fall at the same rate.³¹ Further, it is expected that airline GHG emissions per passenger mile will also improve, although not as substantially that of light vehicles.

The Dynamic Forecast scenarios and corresponding GHG emissions reduction results are as follows:

(A-1) CHSRA Scenario: The CHSRA scenario would have adjusted Scenario B-1 (ridership assumed at the CHSRA midpoint) for consistency with the 2040 trajectory required for achievement of California's 2050 GHG emissions reduction objective (an 80 percent decline). CHSRA's GHG emissions reduction report³² does not provide sufficient information to report a figure for Scenario A-1.

(A-2) Adjusted CHSRA Scenario: The Adjusted CHSRA scenario revises Scenario B-1 (ridership assumed at the CHSRA midpoint) for consistency with the 2040 trajectory required for achievement of California's 2050 GHG emissions reduction objective (an 80 percent decline). The 2040 annual reduction in high speed rail GHG emissions for Scenario B-2 is forecast at approximately 250,000 tonnes. As indicated in Box 1, this ridership would be much lower due to substantial reductions in the cost of driving relative to high speed rail that are expected to result from the CARB ZEV program. This would make the GHG emissions reductions from high speed rail smaller and could even result in an increase in GHG emissions (Section 3.3).

(A-3) International Experience Scenario: The International Experience scenario adjusts Scenario B-1 (ridership assumed at the international experience level) for consistency with the 2040 trajectory required for achievement of California's 2050 GHG emissions reduction objective (an 80 percent decline). The 2040 annual reduction in high speed rail GHG emissions for Scenario A-3 is forecast at approximately 120,000 tonnes. As indicated in Box 1, this ridership could be much lower due to substantial reductions in the cost of driving relative to high speed rail that are expected to result from the CARB ZEV program. This would make the GHG emissions reductions from high speed rail smaller and could even result in an increase in GHG emissions (Section 3.3).

4.3 Static Forecasts and Results

The Static Forecast GHG emissions scenarios are limited to the specific measures that have already been adopted by the state, CARB and the federal government. As noted in Section 2, in these measures will not be sufficient to meet California's 2050 GHG emissions reduction objectives.

³⁰ California Air Resources Board, *Vision for Cleaner Air*, <http://www.arb.ca.gov/planning/vision/vision.htm> and http://www.arb.ca.gov/planning/vision/docs/draft_scenario_assumptions_and_results_appendix.pdf and http://www.arb.ca.gov/planning/vision/docs/vision_for_clean_air_public_review_draft.pdf

³¹ This assumes a constant relationship between high speed rail ridership and automobile use.

³² California High Speed Rail Authority (June 2013), *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels*, http://www.hsr.ca.gov/docs/programs/green_practices/HSR_Reducing_CA_GHG_Emissions_2013.pdf.

The Static Forecast scenarios and corresponding GHG emissions reduction results are as follows:

(B-1) CHSRA Scenario: The CHSRA Scenario (Static Forecast) is limited to the effects of already adopted measures and assumes that no further policies to improve GHG emissions will be adopted by CARB, EPA or any other regulatory authority before 2040. CHSRA's 2040 GHG emissions reduction and midpoint 2040 ridership forecasts are assumed. The 2040 annual reduction in high speed rail GHG emissions for Scenario B-2 is forecast at approximately 1.54 million tonnes (the estimated midpoint for 2040 from the CHSRA GHG emissions reduction report³³).

(B-2) Adjusted CHSRA Scenario: The Adjusted CHSRA Scenario (Static Forecast) is limited to the effects of already adopted measures and assumes that no further policies to improve GHG emissions will be adopted by CARB, EPA or any other regulatory authority before 2040. The scenario assumes an independent GHG emissions reduction based on current government and others forecasts and uses the CHSRA 2040 midpoint ridership (as in Scenario A-2). The 2040 annual reduction in high speed rail GHG emissions for Scenario B-2 is forecast at approximately 0.59 million tonnes.

(B-3) International Ridership Scenario: The International Ridership Scenario (Static Forecast) is limited to the effects of already adopted measures and assumes that no further policies to improve GHG emissions will be adopted by CARB, EPA or any other regulatory authority before 2040. The scenario assumes an independent GHG emissions reduction based on current government and others forecasts uses the CHSRA ridership forecast reduced to account for the average inaccuracy indicated in the international research (Box 1). The 2040 annual reduction in high speed rail GHG emissions for Scenario B-3 is forecast at approximately 0.29 million tonnes.

Box 1
Ridership Projections

CHSRA ridership projections have been criticized for years as too optimistic. International research has indicated that passenger rail programs are routinely projected to carry many more passengers than they usually do. This is acknowledged in the "peer group report" appended to the *2014 Business Plan*, which references *Megaprojects and Risk: An Anatomy of Ambition*, the authoritative volume on the subject of infrastructure forecasting errors (both ridership and cost).³⁴ The principal author, Bent Flyvbjerg and associates have the research, which provides further illustration of the excessive optimism typical of rail passenger projections (Figure 4), indicating that 70 percent of projects have been more than 40 percent inaccurate in their passenger projections.³⁵ On average, passenger rail projects were found to draw 51.4

³³ California High Speed Rail Authority (June 2013), *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels*, http://www.hsr.ca.gov/docs/programs/green_practices/HSR_Reducing_CA_GHG_Emissions_2013.pdf.

³⁴ Bent Flyvbjerg, Nils Bruzelius and Werner Rothengatter, *Megaprojects and Risk: An Anatomy of Ambition*, (Cambridge, UK: Cambridge University Press, 2003)

³⁵ One of the most egregious cases of ridership over-projection is the London to Paris and Brussels *Eurostar*, which operates through the Channel Tunnel. As of 2011, *Eurostar's* ridership remained 60 percent below the original projection made for 2006. See: Joseph Vranich & Wendell Cox, "California High Speed Rail: An Updated Due Diligence Report," Reason Foundation (2013), http://reason.org/files/california_high_speed_rail_report.pdf.

percent fewer riders than projected.³⁶ This figure is used for the International Ridership Scenarios in this report (calculated from the CHSRA Midpoint ridership forecasts).

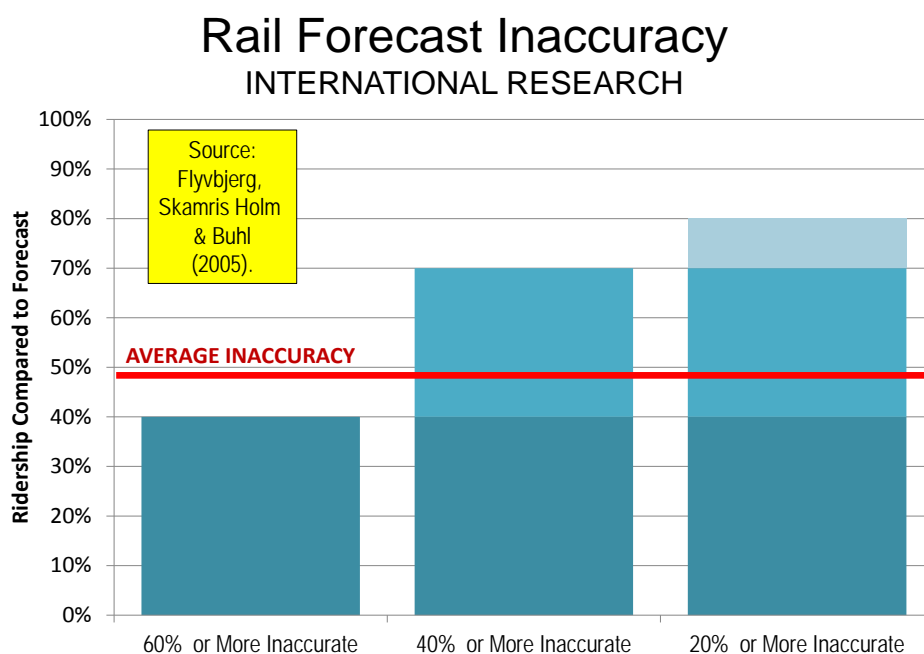


Figure 4

Further, CARB's ZEV program could substantially reduce the cost of travel by light vehicle. For example, the present fuel cost of travel by electric vehicles is approximately half that.³⁷ This would reduce the forecast attraction of high speed rail, because its fares would be higher relative to the cost of traveling by light vehicle and could substantially reduce high speed rail ridership. This would reduce or eliminate GHG emissions reductions from high speed rail.

The estimated GHG emissions reductions are indicated in Figure 5, Table 2 and Appendix Table B-1.

³⁶ Bent Flyvbjerg, Mette Skamris Holm, Søren L. Buhl (2005), How (In)accurate Are Demand Forecasts in Public Works Projects? The Case of Transportation, <http://www.tandfonline.com/doi/abs/10.1080/01944360508976688#.UwjoLvldV5s>.

³⁷ Assumes electricity consumption by light vehicles of 30 kilowatt hours per 100 miles.

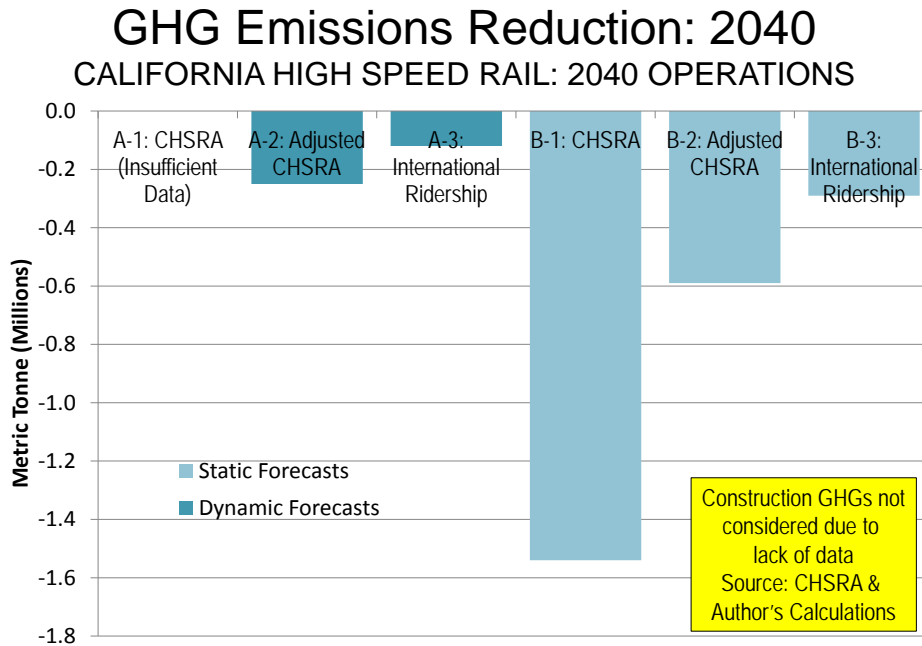


Figure 5

Table 2			
Greenhouse Gas Emission Reductions from High Speed Rail: 2040			
Scenarios	CHSRA	Adjusted CHSRA	International Experience
Dynamic Forecasts	Insufficient Information	-0.25	-0.12
Static Forecasts	-1.54	-0.59	-0.29
In millions of metric tonnes			
Phase 1 Blended System			
Construction GHGs not considered due to lack of data.			
Sources: CHSRA and author's calculations			

5. COST EFFECTIVENESS OF HIGH SPEED RAIL GHG EMISSIONS REDUCTIONS

As is noted above, California's GHG emissions reduction objectives are aggressive and will be challenging to meet.

5.1 The Importance of Cost Effectiveness

The chances that California's objective will be enhanced if the strategies selected are the most cost effective. A prioritization by cost-effectiveness is key for two reasons.

(1) The funds for reducing GHG emissions are limited. Expenditures on strategies that are not optimally cost-effective reduce the GHG emission reduction that is possible. In effect, less cost effective strategies "crowd out" the cost effective strategies.

(2) The use of less cost effective strategies necessarily increases the cost of reducing GHG emissions. These higher costs will take a toll on the economy, requiring higher levels of mitigation fees and taxation, resulting in an overall lower standard of living (as measured by discretionary household income) and higher rates of poverty.

There is general agreement that the GHG emissions reduction requires that cost-effectiveness metrics be applied to proposed strategies. For example:

The European Conference of Ministers of Transport said in a policy document: *It is important to achieve the required emissions reductions at the lowest overall cost to avoid damaging welfare and economic growth.*³⁸

CARB has also stressed the importance of cost effectiveness in its *February 2014 Scoping Report*.

5.2 The Cost of Reducing GHG Emissions

The most common metric for GHG emissions reduction is the cost per metric ton. There are various cost effectiveness estimates for reducing GHG emissions, which are taken at face value in this report:

1. McKinsey & Company has estimated GHG emissions sufficient to achieve IPCC recommended reduction rates to 2030 can be achieved at an average cost of *minus* \$9 per ton, with a range of from minus \$250 to plus \$116.³⁹ McKinsey & Company estimated that 35 percent of the reductions were possible for less than \$0. 40 percent from \$0 to \$29 and 10 percent from \$29 to \$58.⁴⁰
2. Carbon credits can be purchased, with the intention of reducing GHG emissions by one ton per credit. This is the mechanism CHSRA intends to use to offset its GHG emissions from construction, through tree planting programs. Carbon credits can also be purchased by consumers to offset the GHG emissions from air travel. The cost per ton of GHG emissions

³⁸ European Conference of Ministers of Transport (2006), *Transport and Environment: Review of CO2 Abatement Policies for the Transport Sector Conclusions and Recommendations*, European Council of Ministers of Transport. <http://www.internationaltransportforum.org/Topics/pdf/07CO2summary.pdf>

³⁹ The original figures are stated in 2006 Euros and converted here to 2013\$. See: McKinsey and Company (2010), *The Impact of the Financial Crisis on Carbon Economics: Version 2.1 of the Global Greenhouse Gas Abatement Cost Curve*, http://www.mckinsey.com/~media/McKinsey/dotcom/client_service/Sustainability/cost%20curve%20PDFs/ImpactFinancialCrisisCarbonEconomicsGHGcostcurveV21.ashx

⁴⁰ The United Nations Intergovernmental Panel on Climate Change (IPCC) indicated that there is a high level of confidence that a cost range of \$20 to \$50 annually per GHG ton "reached globally in 2020–2030 and sustained or increased thereafter would deliver deep emission reductions by midcentury. Terry Barker, Igor Bashmakov, et al, "Mitigation from a cross-sectoral perspective," Intergovernmental Panel on Climate Change, 2008, www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter11.pdf p. 660

reduction is approximately \$13.⁴¹ This is slightly higher than the clearing price in the November 2013 California cap and trade auction (\$11.48).

There are indications that the costs above may be higher than necessary. United States Environmental Protection Agency (EPA) and CARB programs are expected to reduce GHG emissions at costs of *less than zero*.

Two Obama administration regulatory actions have been adopted to improve light vehicle fuel efficiency through 2017 and 2025. Under each of these already adopted regulations, the EPA estimated that the cost for GHG emission ton removed would be approximately *minus* \$200 by 2040 and *minus* \$300 by 2050.⁴²

CARB has estimated that its ZEV vehicle program will produce consumer savings that are more than double its costs, which like the EPA programs, means that costs were negative.⁴³

In short, it does not appear to be necessary to spend more than an average of near zero per ton of GHG emissions reduction.

5.3 Cost Effectiveness of GHG Emissions Reductions from High Speed Rail

As in the case of the GHG emissions reduction analysis above, costs are estimated for the year 2040 and indicated in year 2013 constant dollars. Generally, the cost of high-speed rail is the total annual capital and operating costs of the system minus costs that are saved as a result of a reduction in light vehicle use and airline flights (The methodology is described in Appendix A).

These costs are divided by the GHG emissions reductions projected for each scenario in Section 4. The results of the cost analysis are:

Dynamic Forecasts: Under the dynamic forecasts, the cost per tonne of GHG emission reductions would range from \$7,100 to \$18,600. As is indicated in Section 6, these figures are many times international metrics for cost effective GHG emission reductions.

Static Forecasts: Under the static forecasts, which assume today's policies and no further initiatives to improve automobiles fuel economy, the cost per tonne of GHG emissions would range from \$1,000 to \$8,000. These figures are also many times international metrics for cost effective GHG emission reductions.

The net high speed rail costs are illustrated in Table 3. The costs per tonne are indicated by scenario in Figure 6, Figure 7, Table 4 and Appendix Table B-2.

⁴¹ See "Terrapass.com," <http://www.terrapass.com/shop/>, accessed February 22, 2014.

⁴² US Environmental Protection Agency, *Regulatory Impact Analysis: Final Rulemaking for 2017-2025 Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards*, <http://www.epa.gov/otaq/climate/documents/420r12016.pdf> and *Final Rulemaking to Establish Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards Regulatory Impact Analysis*, <http://www.epa.gov/otaq/climate/regulations/420r10009.pdf>

⁴³ California Air Resources Board (2012), *Proposed LEV III Economic Analysis: Technical Support Document*, <http://www.arb.ca.gov/regact/2012/leviiiighg2012/levapps.pdf>

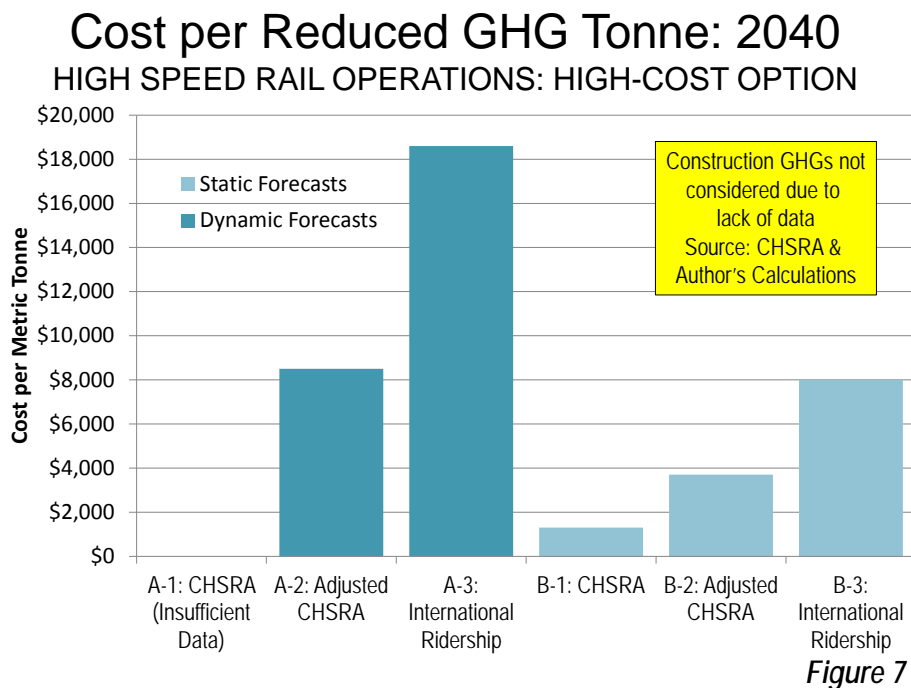
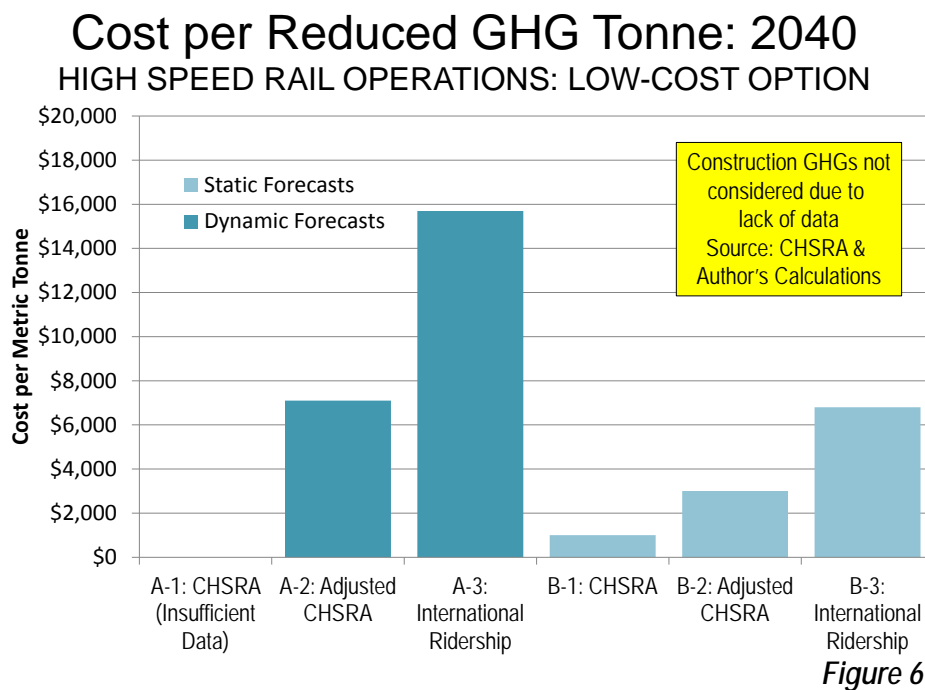


Table 3			
Costs of Greenhouse Gas Emission Reductions from High Speed Rail: 2040 (2013\$)			
	CHSRA	Adjusted CHSRA	International Experience
Low Capital Cost Option	\$1.57	\$ 1.78	\$ 1.96
High Capital Cost Option	\$1.93	\$ 2.14	\$ 2.31
In billions of 2013\$			
Sources: CHSRA and author's calculations			

Table 4			
Cost per Metric Tonne of Greenhouse Gas Emission Reductions from High Speed Rail: 2040 (2013\$)			
	CHSRA	Adjusted CHSRA	International Experience
Low Capital Cost Option			
Dynamic Forecasts	Insufficient Information	\$ 7,100	\$ 15,700
Static Forecasts	\$ 1,000	\$ 3,000	\$ 6,800
2013\$			
High Capital Cost Option			
Dynamic Forecasts	Insufficient Information	\$ 8,500	\$ 18,600
Static Forecasts	\$ 1,300	\$ 3,700	\$ 8,000
2013\$			
Construction GHGs not considered due to lack of data.			
Sources: CHSRA and author's calculations			

6. PRIORITIZING GHG EMISSIONS REDUCTION STRATEGIES

The Legislative Analyst's Office recommended that GHG emissions reductions program be prioritized based on their cost effectiveness, in analyzing the Governor's 2012-2013 budget proposal to use cap and trade revenues for high speed rail.

... we recommend that the Legislature prioritize GHG mitigation programs that have the greatest potential return on investment in terms of emission reductions per dollar invested.⁴⁴

The Legislative Analyst's Office continues, stressing the importance of avoiding unnecessary economic disruption by a rational prioritization of projects:⁴⁵

In order to minimize the negative economic impact of cap-and-trade, it is important that auction revenues be invested in a way that maximizes GHG emission reductions for a given level of spending.

⁴⁴ Legislative Analyst's Office, *The 2012-13 Budget: Funding Requests for High-Speed Rail*, <http://www.lao.ca.gov/analysis/2012/transportation/high-speed-rail-041712.aspx>

⁴⁵ Mac Taylor (February 24, 2014), *The 2014-15 Budget: Cap-and-Trade Auction Revenue Expenditure Plan*, Legislative Analyst's Office, <http://www.lao.ca.gov/reports/2014/budget/cap-and-trade/auction-revenue-expenditure-022414.aspx>.

Given these concerns, we recommend that the Legislature direct ARB to develop metrics for departments to use in order to prospectively evaluate the potential GHG emission benefits of proposed projects, as well as direct the board to establish a set of guidelines for how departments should incorporate these metrics into their decision-making processes. Having such metrics to use as part of departments' decision-making processes when determining how program funding will be spent would provide greater certainty regarding the potential GHG emission reductions of projects being considered for funding

Such a program is a necessary pre-condition to any serious and defensible program for meeting the state's GHG emissions reduction objectives.

The high-speed rail system has not been prioritized based on its cost effectiveness compared to other strategies for reducing GHG emissions. Yet, the costs per ton of GHG emissions reduction from high speed rail is substantially higher than both the metrics and the experience in EPA and CARB programs cited above. The cost of high-speed rail GHG emissions reduction is from 75 to 1,400 times that of current market offset programs such as purchasing carbon offsets (Table 5).

Table 5				
Comparison: Cost of GHG Emissions Reductions per Tonne				
	Low Capital Cost Option	HSR Times Carbon Offset Programs	High Capital Cost Option	HSR Times Carbon Offset Programs
Abatement Cost				
EPA Fuel Economy Standards 2040	-\$200		-\$200	
Carbon Offsets per Tonne	\$13	1	\$13	1
California AB32 Cap & Trade Auction (November 2013)	\$11		\$11	
McKinsey & Company Average	-\$9		-\$9	
UN IPCC	\$20 - \$50		\$20 - \$50	
Dynamic Forecasts				
A-1: CHSRA	Insufficient Information	Insufficient Information	Insufficient Information	Insufficient Information
A-2: CHSRA Adjusted	\$7,100	537	\$8,500	643
A-3: International Experience	\$15,700	1,188	\$18,600	1,408
Static Forecasts				
B-1: CHSRA	\$1,000	76	\$1,300	98
B-2: CHSRA Adjusted	\$3,000	227	\$3,700	280
B-3: International Experience	\$6,800	515	\$8,000	606
Construction GHGs not considered due to lack of data.				
Sources: Authors calculations and text				

Diverting Cap and Trade Funds

The proposal in the 2012 – 2013 budget to fund the high-speed rail from cap and trade revenues was dropped after political opposition. Yet, the 2013 – 2014 budget included a loan from cap and trade funding to the state for general purposes. There is also the 2014 – 2015 budget proposal to transfer \$250 million of cap and trade revenues to high-speed rail. In addition, the Administration has indicated that cap and trade funds should become an even larger share of high-speed rail funding in the future.⁴⁶

⁴⁶ Chris Megerian and Ralph Vartabedian (February 24, 2014), "Gov. Jerry Brown wants polluters' fees to help fund high-speed rail," <http://www.latimes.com/local/la-me-brown-rail-20140228,0,4977021.story#ixzz2ubyMC1e8>.

As indicated above, GHG emission reductions from high-speed rail are far more expensive than necessary and the improvements in light vehicle emissions from CARB policies will substantially diminish these reductions in future years (Section 3.3). The result is an egregiously inefficient use of cap and trade revenues.

The context of the \$250 million is illustrated by the fact that it is sufficient to purchase carbon offsets at the current market rate nearly equal to 90 percent of the GHG emissions reduction required between 2011 and 2020.⁴⁷

To place this in terms parallel to those expressed by CHSRA, the GHG emissions reduction from the \$250 million in cap and trade revenue, spent on carbon credits would *before 2020* be the equivalent of 3,800,000 cars taken off the road annually.⁴⁸ That many cars would stretch 38,000 miles on a single highway lane – equal to circling the world 1.5 times – and is nearly equals the total number of light vehicles in the San Francisco and San Jose metropolitan areas.⁴⁹ (As noted above, CHSRA stated that in its first year of operations [2022], high-speed rail would reduce GHG emissions by the equivalent of 31,000 cars, which it said would stretch 100 miles on a single lane highway).

Longer Term Implications

The longer term impacts are even more stark. This is illustrated by applying the costs of high speed rail GHG emissions reductions in 2040 to the reductions required to achieve the 2050 state objective of an 80 percent reduction.

Based on the 1990 statewide GHG emissions figure, the 80 percent reduction to 2050 would represent approximately 340 million annual tonnes.

The longer run cost intensity is illustrated by applying the minimum high speed rail 2040 costs per tonne (CHSRA Scenario [B-1]) to 80 percent annual 2050 GHG emissions reduction required by state policy from 1990. This calculates to nearly \$350 billion (2013\$), which is approximately 1/7 the present size of California's gross domestic product (GDP). Under the more likely Dynamic Forecast: International Ridership Scenario (A-3) the cost would be up to \$6.2 trillion (2013\$). This is up to three times the size of California's GDP, larger than the GDP of Japan and larger than the output of every country in the world except for the United States and China in 2013.

High Speed Rail: A Temporary Strategy? By 2040 the gap between high-speed rail GHG emissions and light vehicle GHG emissions per passenger mile that is presently so large will have been substantially closed. Within the next decade, further improvements in fuel economy are expected by CARB, which would lead to a virtual elimination of the GHG emissions advantage of high speed rail over cars (at any level of ridership). Thus, high-speed rail would no longer make even its modest commitment to GHG

⁴⁷ In 2011, the statewide GHG emissions were 448 million tonnes. The 2020 objective is 427 million tonnes. At \$13.21 per tonne for a tree planting program (as CHSRA intends to use to abate its construction GHG emission increases), approximately \$275 million would be required. The proposed \$250 million cap and trade funds expenditure of \$250 million is approximately 90 percent of \$275 million.

⁴⁸ This calculation uses the automobile GHG emissions and lane capacity assumptions in California High Speed Rail Authority (June 2013), *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels*,

⁴⁹ According to the US Census Bureau American Community Survey, households in the San Francisco and San Jose metropolitan areas had slightly fewer than 4.0 million vehicles available in 2012. At 5 metric tonnes of GHG annually, the 20 million annual emissions would be 20 million tonnes. This compares to the 19 million tonne reduction required in 2020 relative to 2011.

emissions reductions by the 2060 planning horizon indicated in the *2014 Business Plan*. The impact of high-speed rail on GHG emissions reductions could thus be only temporary, yet hugely expensive.

Political Sustainability

The purpose of California's GHG emissions reduction program is environmental sustainability. Yet, in the final analysis, the survival of public policies requires sufficient public support. Environmental sustainability rests on a foundation of political sustainability.

Appropriation of cap and trade revenues to cost-inefficient strategies such as high-speed rail may not be politically sustainable. A perception that cap and trade revenues are simply a source of funds subject to political whim could fuel political pressure that leads to dilution or abandonment of the state GHG emissions reduction objectives. Over the three and one-half decades between now and 2050, there will be countless opportunities for "raids" on cap and trade revenues.

Moreover, such developments could worsen California's business climate and competitive position relative to other states. Business expansion and site selection in the state could be discouraged by fear that the failure to properly use cap and trade revenues, which are meant to mitigate GHG emissions, would create a demand for even greater financial or regulatory burdens.

7. THE IMPERATIVE FOR COST-EFFECTIVENESS AND REALISM

The Legislative Analyst's Office concluded that the high-speed rail project would contribute little to the GHG emissions reductions in the state,⁵⁰ a conclusion echoed in this report. High-speed rail would not advance the objectives of AB32 because its reductions would all occur after its 2020 deadline. Further, high-speed rail would retard achieving AB32 objectives by using cap and trade funds for purposes that cannot compete in an objective prioritization of cost-effective uses.

The longer-term implications are even more counter-productive. At most, high-speed rail would contribute one half of one percent (0.5 percent) of the required GHG emissions required in 2050 (Figure 8).⁵¹ The greater likelihood is that the contribution will be much smaller, due not only to the likely over-projection of ridership, but also the diminishing, if not disappearing gap between GHG emissions reductions per mile traveled on high speed rail versus light vehicles (Section 3.3). This anticipated policy outcome illustrates the importance of GHG emissions analysis that is dynamic, rather than static. Planning and analysis can only be justified to the extent that it is based in reality.

It is not surprising that high-speed rail is so costly as a strategy for reducing GHG emissions. The most important national and state strategies for reducing GHG emissions from transportation --- programs by the EPA and CARB to improve fuel economy --- are projected to reduce GHG emissions at negative costs of more than \$200 per tonne. By contrast, California's high speed rail line would result in comparatively small reductions in the state by comparison, yet would require substantial capital and operating costs.

⁵⁰ Legislative Analyst's Office, *The 2014-15 Budget: Overview of the Governor's Budget 2014-5*, <http://www.lao.ca.gov/reports/2014/budget/overview/budget-overview-2014.aspx>

⁵¹ This would require the achievement of CHSRA's midpoint GHG emissions reduction forecast in 2050, which is highly unlikely (as this report indicates).

High-speed rail would be a hideously expensive strategy that would consume resources that could be more effectively used to reduce GHG emissions. The use of cap and trade revenues for any use other than the most effective suggests a lack of seriousness toward GHG emissions reduction. There is no doubt that reaching California's goals will be challenging. Success is not guaranteed. If California's GHG emissions reduction goals are imperative, then it is equally imperative that they be pursued with the maximum cost effectiveness.

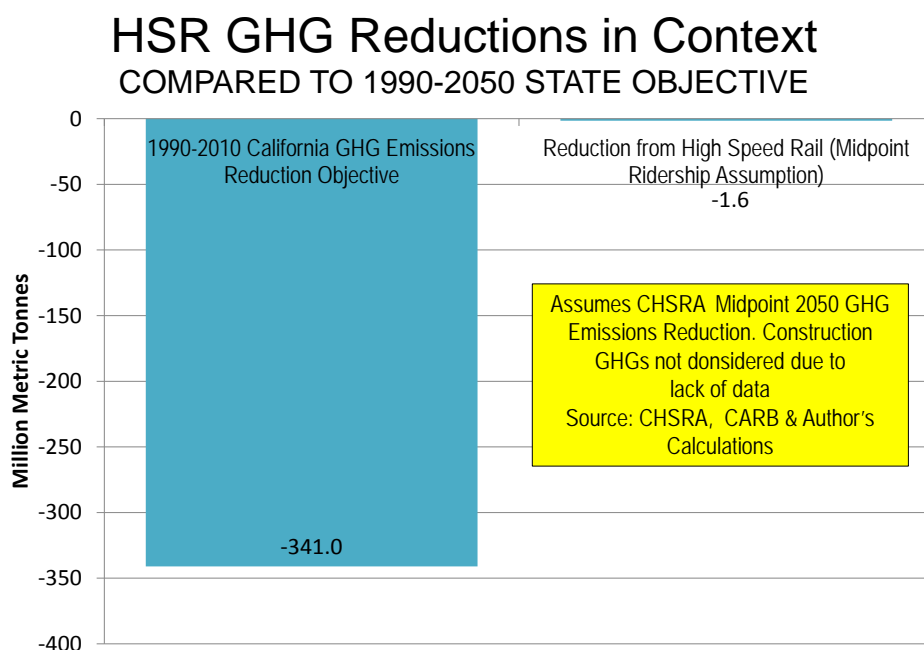


Figure 8

8. LEGALITY OF CAP AND TRADE FUNDING FOR HIGH SPEED RAIL

The principal purpose of this report is to assess the GHG emissions reduction potential of the California high-speed rail line and the relative costs per tonne of any such reduction. There are also considerable legal issues with respect to the use of cap and trade revenues, as proposed by the Brown Administration.

Use of AB32 cap and trade revenues for high-speed rail could be illegal. The Legislative Counsel has advised the Legislative Analyst's Office that funds from cap and trade auctions are "mitigation fees," and that their use for high-speed rail could be illegal.

Use of cap and trade revenues for high-speed rail may be legally challenged as an inappropriate use of "mitigation fees." The Legislative Counsel has advised the Legislative Analyst's Office that funds from cap and trade auctions are "mitigation fees," and that their use for high-speed rail could be illegal for failure to meet the "Sinclair nexus test." A subsequent court ruling found that cap and trade revenues are not taxes.⁵²

⁵² Legislative Analyst's Office, *The 2012–13 Budget: Cap-and-Trade Auction Revenues*, <http://www.lao.ca.gov/analysis/2012/resources/cap-and-trade-auction-revenues-021612.aspx>

Further, using cap and trade funds for high-speed rail could violate the intent of the authorizing legislation, AB32. According to the Legislative Analyst's Office:

The primary goal of AB 32 is to reduce California's GHG emissions statewide to 1990 levels by 2020. Under the revised draft business plan, the IOS would not be completed until 2021 and Phase 1 Blended would not be completed until 2028. Thus, while the high-speed rail project could eventually help reduce GHG emissions somewhat in the very long run, given the project's timeline, it would not help achieve AB 32's primary goal of reducing GHG emissions by 2020. As a result, there could be serious legal concerns regarding this potential use of cap-and-trade revenues. It would be important for the Legislature to seek the advice of Legislative Counsel and consider any potential legal risks,⁵³

In addition to the potential legal problems with using AB32 revenues for high speed rail, high speed rail is not a cost effective GHG emissions reduction strategy (Section 6).

APPENDIX A: METHODOLOGY

CHSRA does not provide a sufficiently detailed methodology to replicate their GHG emissions impacts. As a result, a model was developed for this report that estimates GHG emissions impacts from other information in CHSRA documentation and other sources.

GHG Emissions Impact Estimates

The year 2040 is chosen for analysis, because the *Draft 2014 Business Plan* provides detailed ridership projections between the major markets. These ridership data are used to estimate the extent of passenger travel (in passenger miles). For simplicity, all longer distance demand (more than 300 miles) is assumed to have been diverted from airlines and all shorter distance demand from light vehicles.

CHSRA's June 2013 report did not specifically denote its projected GHG emissions reduction for 2040. However, information was provided for 2035 and 2050, making it possible to estimate a figure for 2040. It is assumed that the CHSRA 2040 figure for GHG emissions reduction would range from 1.18 million annual tonnes to 1.90 million annual tonnes.⁵⁴

Static Forecasts: The reduced GHG emissions that would occur from the transfer of riders to high-speed rail is then estimated for each of the former modes of travel under the Static Forecasts.

Former light vehicle drivers: CO2 emissions are estimated using a base of the 2040 US Department of Energy, Energy Information Administration (*2014 Annual Energy Outlook*) projected mile for the light vehicle stock of 216 grams per vehicle mile.⁵⁵ This figure is increased 5 percent to account for the difference between CO2 emissions and CO2 equivalent emissions,

⁵³ Legislative Analyst's Office, *The 2012-13 Budget: Funding Requests for High-Speed Rail*, <http://www.lao.ca.gov/analysis/2012/transportation/high-speed-rail-041712.aspx>

⁵⁴ California High Speed Rail Authority (June 2013), *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels*,

⁵⁵ US Department of Transportation, Energy Information Administration, *Annual Energy Outlook 2014*.

because greenhouse gases other than CO₂ are not included.⁵⁶ All of the miles driven are then adjusted by the share of travel in city driving versus highway driving. Each of these figures is then reduced by 10% to account for the impact of the California Low Carbon Fuel Standard. It is assumed that all train travelers attracted from cars had driven alone previously.

Former airline passengers: CO₂ emissions are estimated using data from the *SAS Advanced Emission Calculator* for flights in California.⁵⁷ This figure is adjusted downward by approximately 6 percent to account for the improvement in airline fuel efficiency to 2040 as indicated in the *2014 Annual Energy Outlook*, and increased 5 percent to account for the difference between CO₂ emissions and CO₂ equivalent emissions.

Amtrak: New GHG emissions reductions are assumed for passengers transferring from conventional (Amtrak) services to high-speed rail. Amtrak's "San Joaquin" service operates from Oakland to Bakersfield and serves stations that would not be served by high-speed rail, including Oakland, Emeryville, Richmond, Martinez, Antioch-Pittsburg, Stockton, Turlock, Modesto, Merced, Corcoran and Wasco. It is assumed that Amtrak trains will continue to operate without service reductions and as a result there would be little or no reduction in GHG emissions from passengers who use high-speed rail instead.

Induced Travel: All other travel on high-speed rail would be by passengers who would not have made the trip if the high-speed rail system had not been available. Because these induced travelers did not travel previously, it is assumed that there would be no change in GHG emissions.

Light Vehicle Access to High Speed Rail Stations: Additional light vehicle travel will be required traveling to and from high-speed rail stations. This will increase GHG emissions. Overall, it is assumed that 75 percent of station access will be by light vehicle. For origins or destinations without high speed rail stations, the one way travel distance between the nearest station and the urban center is used (such as San Diego and Sacramento. Between the San Francisco Bay Area and Los Angeles no access factor is added, on the assumption that passengers will simply use their previous travel mode of airport access to reach train stations. In other markets, access distance per train trip of between five and 10 miles is assumed, depending on the size of the urban area. Overall, 75 percent of train riders are assumed to access stations by light vehicle. These conservative assumptions are used because no alternate source of such estimates was identified.

Powering High Speed Rail Trains: The literature indicates a wide range of electricity power consumption by high-speed rail. This model assumes the 0.04 kilowatt hours per seat kilometer (per seat kilometer) indicated for trains with top speeds of up to 186 miles per hour (300 kilometers per hour).⁵⁸ However, California's high-speed rail trains are planned to operate at a top speed of 220 miles per hour (354 kilometers per hour), a speed that has been approached only in China (350 kilometers per hour), which has since reduced operating speeds to a maximum of approximately 193 miles per hour (310

⁵⁶ This is consistent with the treatment in California High Speed Rail Authority, *Draft Environmental Impact Report/Statement: Fresno to Bakersfield*, Table 3.3-17, http://www.hsr.ca.gov/docs/programs/fresno-baker-eir/draft_EIR_FresBaker_Vol1_3_3.pdf.

⁵⁷ *SAS Advanced Emission Calculator*, <http://www.flysas.com/en/us/travel-info/other/co2-compensation/>

⁵⁸ Yuki Tanaka, Louis S. Thompson, Lee Schipper, Andrew Kosinski, and Elizabeth Deakin (2010), *Analysis of High Speed Rail's Potential to Reduce CO₂ Emissions from Transportation in the United States*, Paper presented to the World Conference on Transportation Research.

kilometers per hour). Research in China⁵⁹ indicates that 28 percent more in power is required to operate trains at such speeds compared to 186 miles per hour (300 kilometers per hour), which was formerly the highest speeds attained by high speed rail. It is assumed that the trains would reach 350 miles per hour on the genuine high speed rail right of way and no more than 120 miles per hour on the commuter rail right of way (and power requirements are assumed to be lower at 120 miles per hour, consistent with the relationship in the China research).

Consistent with CHSRA data, it is assumed that each train set would have 450 seats.

GHG Emissions from the Train: The trains will not directly produce GHG emissions, however the generation and transmission of electricity for the trains produces GHG emissions. It is assumed that high-speed rail trains will indirectly produce GHG emissions at the average generation and transmission loss mix of electricity consumed in California. According to the California Air Resources Board, California electricity generation and transmission losses produced 0.318 GHG tonnes per megawatt hour consumed in 2011.⁶⁰ This figure is adjusted downward to achieve the 33 percent renewable power standard implemented by CARB for 2020 and beyond.

Other High Speed Rail Functions: It is assumed that the GHG emissions from day to day functioning of high-speed rail stations, maintenance facilities and maintenance rail rights of way would be at the same relationship of GHG emissions from the trains (see *Propulsion Power* above), as is indicated in CHSRA documentation in the Fresno to Bakersfield corridor.⁶¹

Dynamic Forecasts

The "Dynamic Forecasts" adjust the Static Forecasts to replicate an underlying assumption that California will, in 2040, beyond the trajectory to achieve its 2050 GHG emissions reductions, particularly in the transportation sector.

Examples of adjustment to the methodology include:

Adoption of an additional 10 percent Low Carbon Fuel Standard.

Achievement of an 87 percent ZEV share of light vehicles.⁶²

Achievement of the Federal Aviation Administration "CLEEN" airline fuel efficiency standards.⁶³

⁵⁹ Zhang Xing chen, Feng Xuesong, Mac Baohua, Jia Shunping and Feng, Xujie (2011), *Simulation Research on the Traction Energy Consumption of High Speed Trains in China*, Journal of Transportation Systems Engineering and Information Technology.

⁶⁰ Calculated from data in California Air Resources Board (October 2, 2013), *California Greenhouse Gas Emissions for 2000 to 2011, – Trends of Emissions and Other Indicators*, http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_trends_00-11_2013-10-02.pdf

⁶¹ As indicated in California High Speed Rail Authority, *Draft Environmental Impact Report/Statement: Fresno to Bakersfield*, Table 3.3-17, http://www.hsr.ca.gov/docs/programs/fresno-baker-eir/draft_EIR_FresBaker_Vol1_3_3.pdf

⁶² California Air Resources Board, Public Hearing to Consider Advanced Clean Cars Program, <http://www.arb.ca.gov/board/books/2012/012612/12-1-2pres.pdf>.

⁶³ *United States Aviation Greenhouse Gas Emission Reduction Plan* (2012), https://www.faa.gov/about/office_org/headquarters_offices/apl/enviro_policy_guidance/policy/media/Aviation_Greenhouse_Gas_Emissions_Reduction_Plan.pdf

Costs under the Dynamic Forecasts are unchanged, principally because of uncertainties about the operating costs of light vehicles with alternative technologies in 2040.

Cost Impacts:

All costs are expressed in inflation adjusted 2013 dollars and apply to the year 2040.

Annual Capital Cost: Equivalent annual capital costs are developed for the low-cost option and the high cost option using a real interest rate of 3 percent is used over 50 years. There has been considerable variation in federal guidance on annualization rates for capital costs in recent years. As late as 2003, federal guidance recommended the use of real discount rates of 7 percent and 3 percent.⁶⁴ More recently, this has been reduced to 1.9 percent. The US Department of Transportation, Federal Transit Administration (FTA) requires a 2.0 percent rate.⁶⁵ Over the last 30 years, the average real US Treasury bond rate has been 3.3 percent.⁶⁶ It seems likely that the annualization rate will increase toward more historic rate as the Federal Reserve Board's quantitative easing policy is phased out. Virtually all of the high speed capital costs are to be incurred in future years, and an annualization rate of 3.0 percent seems appropriate.

A sensitivity analysis was performed to estimate the differences in cost per tonne of GHG emissions from high speed rail at varying annualization rates. At the FTA real annualization rate of 2.0 percent, the cost per GHG emission tonne reduction would be approximately \$800, compared to the \$1,000 at the 3.0 percent rate for the most favorable scenario in this report (Static Forecast: CHSRA Scenario). At the former OMB real annualization rate of 7.0 percent, the cost per GHG emission tonne reduction would be \$2,200. The use of shorter annualization periods would increase the annualized capital costs.

Annual Operating and Maintenance Cost: The annual operating cost is taken from the *Draft 2014 Business Plan*.

Airline Cost: The savings in airline cost per passenger is based on the passenger fare assumption in the *Draft 2014 Business Plan*.

Light vehicle Cost: The savings in light vehicle cost per vehicle mile is based on the per mile assumptions in the *Draft 2014 Business Plan*.

CHSRA Cost Analysis: CHSRA's GHG emissions reduction report does not include a cost analysis (from which a cost per tonne could be calculated). As a result, the independent cost analysis developed for the Adjusted CHSRA Scenario is used for the CHSRA Scenario.

Caveats

This report produces "dynamic forecasts" of GHG emissions reductions. Dynamic forecasting is generally not employed by public agencies and can be inconsistent with planning guidelines. However, the failure to employ dynamic forecasting --- as may be required by planning regulations and convention --- in

⁶⁴ US Office of Management and the Budget (September 3, 2003), *Circular A-4*, http://www.whitehouse.gov/sites/default/files/omb/assets/regulatory_matters_pdf/a-4.pdf.

⁶⁵ Federal Transit Administration, *New and Small Starts Rating and Evaluation Process Final Policy Guidance August 2013*, http://www.fta.dot.gov/documents/NS-SS_Final_PolicyGuidance_August_2013.pdf.

⁶⁶ Calculated from Office of Management and Budget (December 26, 2013), *Budget Assumptions*, <http://www.whitehouse.gov/sites/default/files/omb/assets/a94/dischist-2014.pdf>.

California's transformative GHG emissions reduction policy environment can render conventional static forecasting to be grossly inaccurate and of little relevance.

This report represents a provisional attempt to develop dynamic forecasts, although it is expected that public agencies, with their far greater resources could substantially improve both the methodology and accuracy. In developing the dynamic forecasts, this report has tended toward conservative assumptions that give the "benefit of the doubt" to high speed rail.

Moreover, the forecasts are at substantial variance with GHG emissions reduction cost metrics. Thus, improvements to the methodology would not be likely to result in differences material enough to alter the public policy conclusion that high speed rail is an exceedingly expensive, and only a temporary measure for reducing GHG emissions.

Further, because no credible assumption was identified the average vehicle occupancy of cars whose occupants travel instead by high speed rail, it was assumed that each car taken off the road had a single occupant, the driver. A more likely higher assumption (such as two passengers per light vehicle) would reduce the GHG emissions reduction per light vehicle and reduce the high speed rail advantage. Similarly, the attraction of a light vehicle passenger who is not the driver to high speed rail would not result in a reduction of GHG emissions by high speed rail. This 1.0 light vehicle occupancy assumption results in *higher* high speed rail GHG emissions reductions than are likely.

APPENDIX B: SUPPLEMENTAL TABLES

Table B-1			
High Speed Rail Greenhouse Gas Emission Impacts: 2040: Static Forecasts			
Dynamic Forecasts			
OPERATIONS & MAINTENANCE	CHSRA	Adjusted CHSRA	International Experience
Automobile Travel	Unknown	(0.35)	(0.18)
Airline Travel	unknown	(0.31)	(0.15)
Trains: Indirect Power	unknown	0.35	0.17
Stations, Facilities & Maintenance of Way	unknown	0.07	0.03
Total	unknown	(0.25)	(0.12)
Static Forecasts			
OPERATIONS & MAINTENANCE	CHSRA	Adjusted CHSRA	International Experience
Automobile Travel	Unknown	-0.56	-0.28
Airline Travel	unknown	-0.44	-0.22
Trains: Indirect Power	unknown	0.35	0.17
Stations, Facilities & Maintenance of Way	unknown	0.07	0.03
Total	-1.54	-0.59	-0.29
In millions of tons			
Construction GHGs not considered due to lack of data.			
Sources: CHSRA & authors calculations			

Table B-2			
High Speed Rail 2040 Costs			
In Billions of 2013\$	CHSRA	Adjusted CHSRA	International Experience
Capital: Equivalent Annual Cost: Low	unknown	\$2.13	\$2.13
Capital: Equivalent Annual Cost: High	unknown	\$2.49	\$2.49
Automobile Cost	unknown	(\$0.83)	(\$0.41)
AirlineCost	unknown	(\$0.40)	(\$0.20)
High Speed Rail Operations & Maintenance	unknown	\$0.87	\$0.43
Total with Low Capital Cost	\$1.57	\$1.78	\$1.96
Total with High Capital Cost	\$1.93	\$2.14	\$2.31
In millions of tons			
Sources: CHSRA & authors calculations			

Paper 2

**Legality of Use
of
Cap-and-Trade
Auction Proceeds
to Fund High-Speed Rail**

**Attorneys Scott B. Birkey and
James M. Purvis**

Cox, Castle, Nicholson

Memorandum**Attorney-Client Privileged****Confidential – Common Interest Privilege**

To: Michael J. Brady

From: Scott B. Birkey
James M. Purvis

Date: February 18, 2014

File No: 062043

Re: Legality of Use of Cap-and-Trade Auction Proceeds to Fund High-Speed Rail

In his 2014-15 budget, the Governor proposes to allocate \$250 million of cap-and-trade auction proceeds to the California High-Speed Rail Authority (the “Authority”). You asked us to consider whether the use of such proceeds to fund high-speed rail would be legal. In short, we believe that an appropriation of cap-and-trade auction proceeds to fund high-speed rail would be vulnerable in a legal challenge because high-speed rail construction will in and of itself not further the goals of AB 32 – that is, to reduce greenhouse gas (“GHG”) emissions statewide to 1990 levels by 2020 – and therefore such appropriation would constitute the use of auction proceeds for an unrelated revenue purpose, which is prohibited under *Sinclair Paint Company v. State Board of Equalization*, 15 Cal.4th 866 (Cal. 1997).

1. **Background on Cap-and-Trade in California**

The Global Warming Solutions Act of 2006 (Chapter 488, Statutes of 2006, codified at Health & Saf. Code, §§ 38500 et seq.), commonly referred to as AB 32, did two important things: (1) it established the goal of reducing GHG emissions statewide to 1990 levels by 2020, *see* Health and Saf. Code, § 38550; and (2) it authorized the California Air Resources Board (“CARB”) to adopt regulations creating “market-based compliance mechanisms” to achieve that goal, *see id.* §§ 38562, 38570. Pursuant to such authority, CARB then adopted regulations that established California’s GHG emissions cap-and-trade program. *See* 17 Cal. Code Regs., §§ 95800 et seq.

In short, CARB’s regulations place a “cap” on aggregate GHG emissions from entities responsible for roughly 85% of California’s emissions. To implement the cap-and-trade program, CARB allocated a certain number of carbon allowances equal to the cap. Each allowance equals one ton of carbon dioxide equivalent. Under the cap-and-trade program,

CARB provides some allowances for free, while making others available for purchase at auctions. Once the allowances have been allocated, entities may then “trade” (i.e., buy and sell on the open market) the allowances in order to obtain enough to cover their total emissions for a given period of time.

To date, CARB has conducted five separate auctions since November 2012.¹ Cumulatively, these auctions have resulted in a total of \$532 million in state revenue, and future quarterly auctions are expected to raise additional revenue. By law, auction proceeds are placed into a special fund in the State Treasury – the Greenhouse Gas Reduction Fund – from which they are available for appropriation by the Legislature. *See* Gov. Code, § 16428.8. From there, the monies must be used “to facilitate the achievement of reductions of greenhouse gas emissions in [California] consistent with” AB 32.² Health & Saf. Code, § 39712.

2. **The Governor’s 2014-15 Proposed Budget**

The Governor’s 2014-15 budget proposes to allocate \$250 million of cap-and-trade auction revenues to the Authority, including \$58.6 million for Phase I project planning as well as \$191.4 million for construction and right-of-way acquisition for the first phase of the Initial Operating Section. *See* GOVERNOR’S BUDGET 2014-15, PROPOSED BUDGET SUMMARY, *available at* <http://www.ebudget.ca.gov/2014-15/BudgetSummary/BSS/BSS.html>.

3. **Use of Cap-and-Trade Auction Proceeds to Fund High-Speed Rail Will Not Further the Purposes of AB 32 and Therefore Will be Vulnerable in a Legal Challenge.**

The constitutionality of CARB’s cap-and-trade program has been raised in two separate lawsuits, *California Chamber of Commerce v. California Air Resources Board* (Case No. 34-2012-80001313, Sacramento Superior Court) and *Morning Star Packing Co. v. California Air Resources Board* (Case No. 34-2013-80001464, Sacramento Superior Court), respectively. If found to be unconstitutional, the cap-and-trade program would be undone in its entirety.³ Even assuming that cap-and-trade is found to be constitutional, however, cap-and-trade auction proceeds nevertheless may not be appropriated by the legislature for unrelated revenue purposes. And because the construction of high-speed rail would not further the purposes of AB 32, any such appropriation would be subject to legal challenge.

¹ A sixth auction will be held on February 19, 2014. *See* CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY, AIR RESOURCES BOARD, AUCTION INFORMATION, <http://www.arb.ca.gov/cc/capandtrade/auction/auction.htm> (last visited February 8, 2014).

² In addition to the auction revenues, AB 32 and the implementing regulations authorize CARB to collect a fee to recover the administrative costs of carrying out AB 32. *See* Health & Saf. Code, § 38597; 17 Cal. Code Regs., §§ 95200 et seq. Such fees are intended to collect an amount of funds necessary to recover CARB’s costs of implementing and enforcing AB 32 each fiscal year.

³ In fall of 2013 the Sacramento Superior Court upheld the constitutionality of the cap-and-trade program, finding that such program did not constitute an unconstitutional tax. *See* Joint Ruling on Submitted Matters, Case No. 34-2012-80001313 (Aug. 28, 2013). This issue now is pending on appeal.

a. **Cap-and-trade auction proceeds must be used to advance the goals of AB 32.**

If ultimately deemed constitutional, cap-and-trade necessarily would be found to constitute any one of three valid fees recognized in the case law: (1) special assessments that are based on the value of a benefit conferred on property; (2) development fees exacted in return for permits and other privileges; or (3) regulatory fees imposed under the State's police power. *See Sinclair Paint v. State Bd. of Equalization*, 15 Cal. 4th 866, 874 (Cal. 1997). Although cap-and-trade does not fit clearly into any one of these three respective types of fees, it most likely would be characterized as a regulatory fee.

Broadly, regulatory fees are not dependent on government-conferred benefits or privilege and are imposed under the police power. *Id.* at 875. Courts have found such fees valid so long as: (1) fee revenues are spent for purposes related to the regulatory activities for which those fees were assessed; and (2) the amount of fees assessed and paid does not exceed the reasonable cost of providing the protective services for which the fees are charged. *See Cal. Farm Bureau Fed'n v. State Water Res. Control Bd.*, 51 Cal.4th 421, 437-42 (Cal. 2011); *Cal. Bldg. Indus. Ass'n v. San Joaquin Valley Air Pollution Control Dist.*, 178 Cal.App.4th 120, 131-32 (Cal. Ct. App. 2009); *Sinclair Paint*, 15 Cal.4th at 876-80.

Notably, California courts have recognized that regulatory fees legally may be imposed as part of a broader regulatory scheme for which the fee payer does not receive any perceived "benefit." *See Pennell v. City of San Jose*, 42 Cal.3d 365, 375 (Cal. 1986). In *Sinclair Paint*, for example, the Supreme Court noted that the State may impose industry-wide "remediation" or "mitigation" fees intended to defray the actual or anticipated adverse effects of an industry's business operations. *See Sinclair Paint*, 15 Cal.4th at 877-78. "From the viewpoint of general police power authority," the *Sinclair Paint* court continued, "we see no reason why statutes or ordinances calling on polluters or producers of contaminating products to help in mitigation or cleanup efforts should be deemed less 'regulatory' in nature than the initial permit or licensing programs that allowed them to operate." *Id.* at 877. But the *Sinclair Paint* court also noted that such "remediation" or "mitigation" fee measures at the least have required a "causal connection" or "clear nexus" between the product and its identified adverse effects. *Id.* at 878, 881.

Based on the foregoing analysis, cap-and-trade auction proceeds must be used for purposes related to the regulatory activities for which those fees were assessed. And in line with such requirement, Health and Safety Code section 39712 plainly requires that auction proceeds be used "to facilitate the achievement of reductions of greenhouse gas emissions in [California] consistent with" AB 32. Thus, in order for cap-and-trade auction proceeds validly to be appropriated to a state agency, any such appropriation must be used to further the purposes of AB 32.

b. Use of cap-and-trade auction proceeds to fund high-speed rail will not further the purposes of AB 32.

Given the legal requirements, the Governor's proposal to fund high-speed rail from cap-and-trade auction proceeds legally is untenable. The primary purpose of AB 32, and the only purpose which is related to construction and ultimate operation of the high-speed rail system, is to reduce California's greenhouse gas emissions to 1990 levels by 2020. And there simply is no support for the conclusion that high-speed rail will help achieve AB 32's purpose of reducing GHG emissions to such levels.

As an initial matter, according to the Authority's Revised 2012 Business Plan, high-speed rail will not be operational until 2022 at the earliest.⁴ And by its own admissions, the Authority itself has recognized that "construction activities will generate GHG emissions."⁵ See CALIFORNIA HIGH-SPEED RAIL AUTHORITY, CONTRIBUTION OF THE HIGH-SPEED RAIL PROGRAM TO REDUCING CALIFORNIA'S GREENHOUSE GAS EMISSION LEVELS 9, 13-15 (2013). That is, even under the Authority's best estimates, high-speed rail will not help to reduce GHG emissions by 2020. Thus, even assuming that high-speed rail might eventually reduce GHG emissions in the long term, it would not help to achieve AB 32's primary goal of reducing greenhouse gas emissions to 1990 levels by 2020. On this basis alone, the use of cap-and-trade auction proceeds to fund high-speed rail will be vulnerable in a legal challenge. And on this basis as well, the Legislature's budget analyst similarly has concluded that the use of auction proceeds to fund high-speed rail legally is risky. LEGISLATIVE ANALYST'S OFFICE, THE 2012-13 BUDGET: FUNDING REQUESTS FOR HIGH-SPEED RAIL 7-8 (2012) (attached hereto as **Exhibit A**); LEGISLATIVE ANALYST'S OFFICE, THE 2014-15 BUDGET: OVERVIEW OF THE GOVERNOR'S BUDGET 37-38 (2014) ("Specifically, we are advised that [use of auction proceed revenues] is

⁴ The Authority's Draft 2014 Business Plan, which was released on February 7, 2014, maintains that operation will not begin prior to 2022. See CALIFORNIA HIGH-SPEED RAIL AUTHORITY, DRAFT 2014 BUSINESS PLAN 16 (2014).

⁵ While the Authority explicitly recognizes that construction of the project will generate greenhouse gas emissions, it nonetheless contends that it is "committed to achieving zero net GHG emissions related to construction activities" by use of various offset strategies. CALIFORNIA HIGH-SPEED RAIL AUTHORITY, CONTRIBUTION OF THE HIGH-SPEED RAIL PROGRAM TO REDUCING CALIFORNIA'S GREENHOUSE GAS EMISSION LEVELS 13 (2013). Thus, if appropriated to the Authority, cap-and-trade auction proceeds ironically might be utilized by the Authority not to reduce greenhouse gas emissions but as a way to offset its own construction-related GHG emissions. But even assuming that the Authority correctly asserts that construction ultimately will result in zero net greenhouse gas emissions, such a result merely will maintain the status quo, that is, *it will not contribute to AB 32's goal of actually reducing emissions to 1990 levels by 2020.*

Alternatively, in the event that offsets are not employed, researchers have studied high-speed rail's "payback" period (the point at which the GHG emissions reductions from the substitution of auto and air trips for high-speed rail trips equals the GHG emissions produced by the high-speed rail project) and concluded that GHG payback likely would not occur until 20 to 30 years after groundbreaking. See MIKHAIL CHESTER & ARPAD HORVATH, HIGH-SPEED RAIL WITH EMERGING AUTOMOBILES AND AIRCRAFT CAN REDUCE ENVIRONMENTAL IMPACTS IN CALIFORNIA'S FUTURE 9 (2012). Chester and Horvath note, however, that "payback is highly sensitive to reduced automobile travel," any therefore any slip in ridership from currently predicted levels would delay the expected payback period even further. *Id.*

subject to the so-called Sinclair nexus test. . . . Given this legal requirement, the administration's proposal to fund activities (such as high-speed rail) could be legally risky.") (attached hereto as **Exhibit B**).

Further, multiple studies suggest that, even if in the long-term high-speed rail will result in GHG emissions reductions, such reductions will be substantially lower than the Authority projects. At least one commenter, for example, has concluded that methodological faults in the Authority's emissions reductions estimates led to a 130 to 190 percent overestimation of GHG emissions reductions. *See* JOEL SCHWARTZ, BLUE SKY CONSULTING GROUP, COMMENTS SUBMITTED TO THE CALIFORNIA HIGH SPEED RAIL AUTHORITY ON THE REVISED DRAFT ENVIRONMENTAL IMPACT REPORT/SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE FRESNO-BAKERSFIELD SEGMENT OF THE CALIFORNIA HIGH SPEED TRAIN PROJECT (Oct. 16, 2012). And others have concluded that the Authority's ridership estimates are flawed, and that such flaws cast doubt on the Authority's GHG emissions reduction estimates. *See, e.g.,* DAVID BROWNSTONE, MARK HANSEN & SAMER MADANAT, REVIEW OF "BAY AREA/CALIFORNIA HIGH-SPEED RAIL RIDERSHIP AND REVENUE FORECASTING STUDY" (June 2010).

The more attenuated the relationship between each dollar spent from cap-and-trade and the GHG emissions reduction achieved, the more likely a court would be to find that the use of cap-and-trade auction proceeds to fund high-speed rail would be for an "unrelated revenue purpose," rather than to advance the purposes of AB 32. *See Sinclair Paint*, 15 Cal.4th at 878.

4. **In Any Event, Use of Cap-and-Trade Auction Proceeds to Fund High-Speed Rail is a Poor Investment Strategy and Therefore Inconsistent with State's Stated Intention of Spending Such Proceeds Well.**

Finally, we note that a number of commentators have questioned the wisdom of using cap-and-trade auction proceeds to fund high-speed rail as a poor investment strategy. And although not a legal requirement, the current Cap-and-Trade Auction Proceeds Investment Plan reflects the State's intention to spend cap-and-trade auction proceeds well. *See* STATE OF CALIFORNIA, CAP-AND-TRADE AUCTION PROCEEDS INVESTMENT PLAN: FISCAL YEARS 2013-14 THROUGH 2015-15 (May 14, 2013) ("The investment of the cap-and-trade auction proceeds brings both the opportunity and the responsibility to spend them well and to further the objectives of AB 32.").

Certainly as compared to a different mix of investments that could be made with cap-and-trade revenue, the Governor's proposal is unlikely to maximize GHG emissions reductions. For instance, even assuming that the Authority's estimates for the less costly 2008 proposed system are accurate, achieving GHG emissions by building the high-speed rail system could cost many times the \$20 to \$50 per ton that that United Nations Intergovernmental Panel on Climate Change has concluded would achieve sufficient GHG emissions reductions. *See* WENDELL COX & JOSEPH VRANICH, THE CALIFORNIA HIGH SPEED RAIL PROPOSAL: A DUE DILIGENCE REPORT

(2008); *see also* Terry Barker et al., *Mitigation from a Cross-Sectoral Perspective*, in CONTRIBUTION OF WORKING GROUP III TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (2007). Under such standard, use of cap-and-trade auction proceeds to achieve greenhouse gas reductions would be extremely cost-ineffective, and would divert these important funds from other uses that would constitute far better investment strategies. This policy perspective could help color legal arguments made against the use of cap-and-trade auction proceeds for high-speed rail.

EXHIBIT 'A'

EXHIBIT 'A'

environmental review for various sections of the project.

In addition, the Governor's January budget proposal includes \$17.9 million for state operations to fund the authority for 73 positions (including 19 new positions), contracts with other state departments, and external contracts for communications, program management, and financial consulting services.

BUSINESS PLAN AND BUDGET PROPOSALS RAISE CONCERNS

Based on our review of the 2012 business plan and the Governor's related budget proposals, we find that the HSRA has not provided sufficient detail and justification to the Legislature regarding its plan to build a high-speed rail system. Specifically, we find that (1) most of the funding for the project remains highly speculative, including the possible use of cap-and-trade revenues; and (2) important details regarding the very recent, significant changes in the scope and delivery of the project have not been sorted out.

Most of the Future Funding Remains Speculative

Future Funds Not Identified. The future sources of funding to complete Phase 1 Blended are highly speculative. Specifically, the funding approach outlined in the 2012 revised business

plan is no more certain than what was proposed in previous plans. For example, the recent plan assumes nearly \$42 billion, or 62 percent of the total expected cost, will be funded by the federal government. However, about \$39 billion of this amount has not been secured from the federal government. Given the federal government's current financial situation and the current focus in Washington on reducing federal spending, it is uncertain if any further funding for the high-speed rail program will become available. In other words, it remains uncertain at this time whether or not the state will receive the necessary funds to complete the project. The absence of an identified funding source at the federal level makes the state's receipt of additional funding unlikely, particularly in the near term. In addition, it is unclear how much, if any, other non-state funds (such as local funds, and funds from operations and development, or private capital) have been secured. In total, only \$11.5 billion (or about 17 percent) of the estimated funds needed to complete the project have been committed.

Use of Cap-and-Trade Auction Revenues Very Speculative. As discussed earlier, the plan proposes to use revenue from the state's quarterly cap-and-trade auctions, which are scheduled to begin in November of this year, to backstop any shortfall in anticipated funding from the federal government. These auctions involve the selling of carbon allowances as a way to regulate and limit the state's GHG

Figure 4

Central Valley Segment Divided Into Five Design-Build Contracts

Contract	Description	Length in Miles ^a	Cost Estimate (In Billions)	Estimated Date of Contract Award
1	North of Fresno through Fresno	26 to 37	\$1.5	December 2012
2	South Fresno to Hanford Aroma Road	28	0.8	September 2013
3	Hanford Aroma Road to Dresser Avenue	55	1.0	September 2013
4	Dresser Avenue to Allen Road	14	0.4	October 2013
5	Trackwork for the entire 130 mile segment	N/A	0.5	March 2017

^a Length of construction segments are approximate.

emissions in accordance with Chapter 488, Statutes of 2006 (AB 32, Núñez/Pavley). As we discussed in our recent brief, *The 2012-13 Budget: Cap-and-Trade Auction Revenues*, the use of cap-and-trade revenues are subject to legal constraints. Based on an opinion we received from Legislative Counsel, the revenues generated from the cap-and-trade auctions would constitute “mitigation fee” revenues. Therefore, in order for their use to be valid as mitigation fees, these revenues must be used to mitigate GHG emissions. Given these considerations, the administration’s proposal to possibly use cap-and-trade auction revenues for the construction of high-speed rail raises three primary concerns.

- ***Would Not Help Achieve AB 32’s Primary Goal.*** The primary goal of AB 32 is to reduce California’s GHG emissions statewide to 1990 levels by 2020. Under the revised draft business plan, the IOS would not be completed until 2021 and Phase 1 Blended would not be completed until 2028. Thus, while the high-speed rail project could eventually help reduce GHG emissions somewhat in the very long run, given the project’s timeline, it would not help achieve AB 32’s primary goal of reducing GHG emissions by 2020. As a result, there could be serious legal concerns regarding this potential use of cap-and-trade revenues. It would be important for the Legislature to seek the advice of Legislative Counsel and consider any potential legal risks.
- ***High-Speed Rail Would Initially Increase GHG Emissions for Many Years.*** As mentioned above, in order to be a valid use of cap-and-trade revenues, programs will need to reduce GHG emissions. While the HSRA has not conducted an analysis to

determine the impact that the high-speed rail system will have on GHG emissions in the state, an independent study found that—if the high-speed rail system met its ridership targets and renewable electricity commitments—construction and operation of the system would emit more GHG emissions than it would reduce for approximately the first 30 years. While high-speed rail could reduce GHG emissions in the very long run, given the previously mentioned legal constraints, the fact that it would initially be a net emitter of GHG emissions could raise legal risks.

- ***Other GHG Reduction Strategies Likely to Be More Cost Effective.*** As we discussed in our recent brief on cap-and-trade, in allocating auction revenues we recommend that the Legislature prioritize GHG mitigation programs that have the greatest potential return on investment in terms of emission reductions per dollar invested. Considering the cost of a high-speed rail system relative to other GHG reduction strategies (such as green building codes and energy efficiency standards), a thorough cost-benefit analysis of all possible strategies is likely to reveal that the state has a number of other more cost-effective options. In other words, rather than allocate billions of dollars in cap-and-trade auctions revenues for the construction of a new transportation system that would not reduce GHG emissions for many years, the state could make targeted investments in programs that are actually designed to reduce GHG emissions and would do so at a much faster rate and at a significantly lower cost.

EXHIBIT 'B'

EXHIBIT 'B'

Jail Construction

Governor Proposes an Additional \$500 Million for Jail Construction. Since 2007, the Legislature has approved two measures authorizing a total of \$1.7 billion in lease-revenue bonds to fund the construction and modification of county jails. Chapter 7, Statutes of 2007 (AB 900, Solorio), provided \$1.2 billion to help counties address jail overcrowding. Chapter 42, Statutes of 2012 (SB 1022, Committee on Budget and Fiscal Review), authorized an additional \$500 million to help counties construct and modify jails to accommodate longer-term inmates who have been shifted to county responsibility under the 2011 realignment of lower-level offenders. The Governor's budget for 2014-15 proposes that another \$500 million in lease-revenue bonds be authorized to support the construction of jail facilities. Under the proposal, counties would be subject to a 10 percent match requirement.

LAO Comments. The administration has not yet provided an analysis of county jail needs or other rationale for why the level of funding proposed is needed for jail projects or what criteria would be used to award the lease-revenue funding. For example, it is not clear whether funding would be awarded in a manner to alleviate crowding or to build additional facility space for programs, such as substance abuse treatment classes. Without such information, it will be difficult for the Legislature to assess whether the additional funding will be allocated in a manner that is cost effective and in line with state priorities.

Resources and Environmental Protection

Cap-and-Trade Expenditure Plan

Background. The Global Warming Solutions Act of 2006 (Chapter 488, Statutes of 2006 [AB 32, Núñez/Pavley]), commonly referred to as AB 32,

established the goal of reducing GHG emissions statewide to 1990 levels by 2020. In order to help achieve this goal, the California Air Resources Board (ARB) adopted a regulation that establishes a cap-and-trade program that places a "cap" on aggregate GHG emissions from entities responsible for roughly 85 percent of the state's GHG emissions. To implement the cap-and-trade program, ARB allocates a certain number of carbon allowances equal to the cap. Each allowance equals one ton of carbon dioxide equivalent. The ARB provides some allowances for free, while making others available for purchase at auctions. Once the allowances have been allocated, entities can then "trade" (buy and sell on the open market) the allowances in order to obtain enough to cover their total emissions for a given period of time.

To date, ARB has conducted five auctions since November of 2012, which have generated a total of \$532 million in state revenue. Future quarterly auctions are expected to raise additional revenue. The *2013-14 Budget Act* authorizes the Director of Finance to loan \$500 million in cap-and-trade auction revenue to the General Fund.

Governor's Proposal. The Governor's budget proposes to spend \$850 million from cap-and-trade auction revenue in 2014-15 on various activities such as energy efficiency projects, low-emission vehicle rebates, and the state's high-speed rail project. Figure 14 (see next page) provides a list of the proposed programs and funding levels. The Governor's budget also includes a partial repayment of \$100 million of the 2013-14 budget loan to the General Fund.

Proposal Unlikely to Maximize GHG Emission Reductions. In order to minimize the economic impact of cap-and-trade, it is important that auction revenues be invested in a way that maximizes GHG emission reductions. Maximizing emission reductions (specifically in the capped sectors) reduces competition for allowances,

thereby putting downward pressure on the price of allowances. This, in turn, reduces the overall cost for covered entities to comply with AB 32 and the potential negative economic impacts of the program on consumers, businesses, and ratepayers. It is, however, unclear to what extent the complement of activities proposed by the Governor maximizes GHG emission reductions. For example, a GHG emission analysis completed by the High Speed Rail Authority (HSRA) indicates that once the high-speed rail system is operational in 2022, it would contribute a relatively minor amount of GHG emission reductions to the state. Moreover, the construction of the project would actually produce additional emissions (though HSRA will try to offset these emissions). Despite these findings, roughly 30 percent of the funding in the Governor's proposal goes to the high-speed rail project. Compared to a different mix of investments that could be made with the cap-and-trade revenue, the Governor's proposal is unlikely to maximize GHG emission reductions. Therefore, the Legislature will need to consider the most effective use of the cap-and-trade auction revenue.

Certain Aspects of Proposal Could Be Legally Risky. The Legislature will also want to consider

the potential legal risks associated with some of the activities that the Governor proposes to fund with cap-and-trade auction revenue. Based on an opinion that we received from Legislative Counsel, the revenues generated from ARB's cap-and-trade auctions are considered "mitigation fee" revenues. Thus, the use of these revenues are subject to certain legal criteria. Specifically, we are advised that their use is subject to the so-called Sinclair nexus test. This test requires that a clear nexus must exist between an activity for which a mitigation fee is used and the adverse effects related to the activity on which that fee is levied. Given this legal requirement, the administration's proposal to fund activities (such as high-speed rail) could be legally risky. While the high-speed rail project could eventually help reduce GHG emissions somewhat in the very long run, it would not help achieve AB 32's primary goal of reducing GHG emissions by 2020.

Water Action Plan

Proposal. In October 2013, the administration released a draft Water Action Plan that intends to address multiple water challenges facing the state, including limited and uncertain water supplies,

Figure 14

Governor's 2014-15 Cap-and-Trade Expenditure Plan

(In Millions)

Department	Activity	Amount
High-Speed Rail Authority	Rail planning, land acquisition, and construction	\$250
Air Resources Board	Low-emission vehicle rebates	200
Strategic Growth Council	Transit oriented development grants	100
Community Services and Development	Low-Income Home Energy Assistance Program	80
Caltrans	Intercity rail grants	50
Forestry and Fire Protection	Fire prevention and urban forestry	50
Fish and Wildlife	Water Action Plan—wetlands restoration	30
CalRecycle	Waste diversion	30
General Services	Energy efficiency upgrades in state buildings	20
Food and Agriculture	Reducing agricultural waste	20
Water Resources	Water Action Plan—water use efficiency	20
Total		\$850

Paper 3

Analysis of the CHSRA's GHG Report

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Analysis of the CHSRA's GHG Report

On July 1, 2013, the California High-Speed Rail Authority released its *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels* (June 2013).¹ It is meant to fulfill the mandate contained in SB 1029 (the Legislature's authorization of HSR bonds for the Central Valley project) to provide "a report on the 'net impact of the high-speed rail program on the state's greenhouse gas emissions.'"² However, the report fails to quantify the project's emissions and emissions reductions, thereby making an evaluation of the program's net impact impossible.

The report is obviously intended to counter the Legislative Analyst's budget report³ of April 2012, which concluded that the HSR project would result in a net increase in GHG emissions for the first 30 years of operations. Knocking down that report would open the door to funding HSR with cap and trade revenues. Interestingly, the CHSRA report never mentioned the LAO report and pretended it didn't exist. Someone must have concluded they couldn't win an argument on the merits.

Rather than dispute the LAO report, the CHSRA report claims to "detail[] the projected net greenhouse gas (GHG) emissions associated with the construction and operation of the high-speed rail system."⁴ However, the report offers no details of those emissions. If numbers were developed during the preparation of the report, they weren't included in the publication. This is a politicized promotional piece and not a science-based document. It is simply not credible and not responsive to the legislative mandate.

Update: The Governor's Budget Proposal

The Governor proposed that \$250 million in 2014-15 cap and trade revenues go to HSRA. He further requested that 33% of all cap and trade revenues starting with 2015-16 be continuously appropriated to HSRA.⁵ These many billions of dollars, if not well-spent by the HSR project, could threaten the effectiveness of the entire cap and trade program. Careful scrutiny of the HSR project's net GHG benefits is warranted.

Methodology

A disclosure on p. 17 invalidates the entire report: "The timeframe and activities analyzed and discussed in this report were for CP1 [the first phase of the current Merced-Bakersfield project]. As the project moves forward, direct GHG emissions calculations will be carried out for each subsequent construction package." The construction impacts of CP1 cannot be meaningfully analyzed in relation to the operational emissions

reductions calculations, because the latter pertains to the Initial Operating Section (IOS), which is ten times its length. No HSR operations are planned for CP1.

This is critical, because the report is actually comparing the emissions benefits of the IOS to the emissions costs of the one-tenth-as-long CP1. Completing the IOS would require funding the \$26 billion extension to the LA Basin, as well as building CP2, CP3, CP4 and CP5 [the remainder of the Merced-Bakersfield project]. Obviously, the net project emissions are going to be very different when the emissions arising from \$26+ billion of construction are added in.

Evaluating the HSR program's net impacts requires either the operational emissions reductions of CP1 or the construction emissions of the IOS. This report offers neither.

Summary of Findings

The following six so-called Findings are mere restatements of vague intentions, with no identified funding to implement them:

- Commitment to 100% renewable energy during operations
- Zero net greenhouse gas emissions during construction
- Supportive transit and land use for greater cumulative benefits for the state
- Plans to plant thousands of new trees across the Central Valley
- Cleaner school buses and water pumps in Central Valley communities
- Agricultural conservation measures aimed at reducing Central Valley sprawl and preserving valuable agricultural land⁶

In addition, the report offers no evidence in support of the following two so-called Findings:

- Zero net greenhouse gas emissions during construction⁷

There is no evidence to support this claim. No numbers whatsoever are offered for GHG mitigation activities. This is a classic "aspirational goal" rather than a finding on a plan to achieve one.

- Significant contributions to the State's goals embodied in AB 32 and SB 375⁸

There is no evidence to support this claim.

Not only is there no evidence to support the following three so-called Findings, they are actively misleading, as they are entirely dependent on CHSRA receiving an additional \$26 billion to build out the IOS to the Los Angeles Basin. In addition, they will mislead non-technical readers because they appear to be findings on the project's net emissions impacts. Because they exclude the construction emissions of both CP1 and the IOS, they represent only one side of the emissions ledger.

- Greenhouse gas savings from the first year of operations increasing to over 1 million tons of CO2 per year within 10 years⁹
- Result in net GHG emissions diversions that, conservatively, are the equivalent of the GHG emissions created from the electricity used in 22,440 houses, or removing 31,000 passenger vehicles from the road.¹⁰

- Using methodologies consistent with state practice, an estimated 4 to 8 million metric tons of CO₂ saved by 2030, as if the state turned off a coal fired power plant¹¹

As discussed below, this last assertion is also misleading because the 8 years of operations are being compared to roughly one year of such a power plant's emissions.

GHG Emissions Sources for High-Speed Rail System

The diagram on page 9 is the only rendition of emissions category totals in the report. Amazingly, there is no corresponding table. The diagram comes closer to identifying the net impact than anything else in the report. However, its use of graphic symbols instead of conventional chart bars makes it impossible to interpret quantitatively. It is unclear from the diagram (or its associated text) whether the symbols have any quantitative significance, and if they do, whether emissions totals are represented by the height or by the area of the symbols. This makes the diagram both useless and deceptive: it obscures more than it discloses. Given the central importance of this data, choosing this indecipherable diagram for its portrayal can only be interpreted as an act of bad faith.

Operational Emissions Reductions

This project has had a long history of challenges to the technical validity of the HSR ridership model and litigation about the hidden changes that were made to it that advantaged Pacheco ridership while penalizing Altamont ridership. Ridership is the key input to an analysis of operational emissions reductions. As will be discussed later, the GHG reduction benefits of the HSR project are very dependent on ridership. With the controversy surrounding the ridership projections, this net emissions analysis rests on a shaky foundation.

The most striking part of this section is the meaningless apples-and-oranges comparison between the annual emissions of a coal-fired power plant and the emissions reductions from 8 years of HSR operations.¹² This is an attempt to invite positive identification with HSR by creating a "Coal Bad--HSR Good" dualism, a classic technique of promotion.

Construction Emissions

While the report uses standard methods to calculate the direct emissions resulting from construction, it entirely leaves out the emissions resulting from the acquisition of construction materials, and offers a weak justification that these emissions shouldn't be counted against the project:

Regarding the construction materials, for some it is possible to calculate the impacts over the material's life-cycle, from extraction through processing, use onsite, and disposal, and express those impacts in GHG emissions terms. Those GHG emissions are usually the reporting responsibility of the manufacturer, and in terms of a project GHG emissions

inventory, happen "upstream" and outside the boundary of the project.

For example, cement manufacturers in California are subject to ARB's Mandatory Reporting and Cap-and-Trade Regulations. These regulations require cement manufacturers to report their GHG emissions annually to ARB. The emissions from cement manufacturing count towards the statewide GHG emissions "cap." The GHG emissions covered under the "cap" are required to be reduced through emission controls or a limited amount (eight percent) may be offset through the purchase of ARB certified offset credits.¹³

The problem is that these emissions from construction materials constitute a very significant part of the project's overall emissions, because of the huge amount of concrete called for in the plans. This amount is large enough to increase the cement manufacturing sector's statewide emissions, which makes the "count it upstream" approach entirely inappropriate when evaluating the project's net impacts.

Perhaps recognizing this, the next paragraph of the report acknowledges the appropriateness of including the emissions from construction materials in its analysis, yet withholds the data on the flimsy excuse that the data is not "precise" enough:

However, the Authority considers it important to disclose the GHG emissions that occur outside of the project associated with materials used during construction. **These have not yet been quantified, due to the limitations of available information at this stage of project delivery.** While it is understood that the rail infrastructure will consist, largely of aggregate, concrete, steel, rails, and ballast; the **precise** source and supplier of those materials is not yet known. Additionally, the **precise** quantities are not available, given the nature of the design-build procurement process... (emphasis added)¹⁴

This is a masterful exercise in appearing to be fair-minded while simultaneously holding back damaging information. It is obvious that in the course of putting the project out to bid, the Authority prepared estimates of construction material quantities. These estimates were the basis for the calculation of the direct construction emissions. The materials' emissions must be **huge** for the Authority to need to bury them with this kind of double-talk.

The Legislative Analyst's April 2012 report¹⁵ relied on a 2010 pioneering study by Chester and Horvath entitled *Life-cycle assessment of high-speed rail: the case of California*.¹⁶ The study's 2012 update produced data that enabled this calculation: Infrastructure construction and operations contribute between 40% and 51% of the

CHSRA project's GHG emissions per person per kilometer travelled. This figure rises to near 100% of the emissions for the scenario with 100% renewable power, and falls to 32% when the train's capacity is nearly doubled.¹⁷ The paper found "CAHSR infrastructure construction effects are dominated by concrete use. Approximately 67% of CAHSR infrastructure emissions are the result of cement production for concrete use..."¹⁸

This is the smoking gun: Construction materials (as well as infrastructure construction, if one doesn't assume the success of the zero net GHG emissions program¹⁹) make up a highly significant percentage of the project's overall GHG emissions. Leaving them out so compromises the net impact analysis as to render it worthless.

The Chester and Horvath study calculated the project's payback period, the point at which the emissions reductions from the substitution of auto and air trips (measured as Vehicle Kilometers Traveled, or VKT) with HSR trips equals the HSR project's GHG emissions, including its cumulative prior emissions:

The payback sensitivity reveals several important considerations for transportation planners and air quality policy makers. The cumulative plum-colored lines for the high, medium and low forecast figures show that the **GHG payback will likely occur between 20 and 30 yr (D3) after groundbreaking**, and acidification potential after 20–40 yr. **However, payback is highly sensitive to reduced automobile travel.** The 5.8 billion auto VKT displaced dominate emissions changes in the corridor and the effects from reduced air travel and CAHSR are small. The reduced auto impacts are significantly affected or dominated by life-cycle components, in particular, avoided vehicle manufacturing, vehicle maintenance and gasoline production. (emphasis added.)²⁰

Chester and Horvath are thus warning that any slip in ridership from currently predicted levels would delay the GHG benefits of HSR even further.

Double Counting

When evaluating statewide benefits, it is important that GHG emissions reductions calculations represent only the project's own properties. The model that was used, on the other hand, "also reflects the GHG emissions benefits of ARB's recent rulemakings including on-road diesel fleet rules, Pavley Clean Car Standards, and the Low Carbon Fuel standard."²¹ This means that the report's emissions reduction calculations overstate the benefits accruing to the HSR project.

Offset Activities

The only way the CHSRA's GHG Report is able to claim a net beneficial GHG impact is by buying offsets in the form of environmental mitigations, including construction mitigations,²² and farmland protection.²³ The strategy of the Cap and Trade program is

to purchase GHG-reducing offsets at the lowest cost per ton. There's something very odd about committing Cap and Trade funds to a project that increases GHGs, which then has to buy GHG-reducing offsets. It would be dramatically less expensive on a per-ton basis to fund the GHG-reducing projects directly. Buying these same offsets as part of a CHSRA project package is inherently far more expensive.

Conclusion

The report offers no numbers capable of serving as a basis for the conclusion that "the high-speed rail program will have a positive impact on reducing the state's greenhouse gas emissions."²⁴ Instead, that conclusion "'feels right' without regard to evidence, logic, intellectual examination, or facts"--the Wikipedia definition of Stephen Colbert's 'truthiness'.

Endorsements

The uncritical endorsements of the report by agency heads expose the depth of its politicization. It simply is not credible that sophisticated agency heads and their staffs failed to spot the profound flaws identified above. Brian Kelly, now Secretary of the State Transportation Agency, "reviewed and approve[s]" the report.²⁵ Mary Nichols, Chair of the Air Resources Board, "believe[s] the analysis is reasonable..."²⁶ Instead of the comprehensive overview expected of someone of her subject matter expertise, she offered only superficial comments on the emissions reductions from mobility choices, and avoided construction emissions and offsets entirely. These two endorsements make it obvious that the Governor ordered his people to "make HSR funding happen" no matter what.

¹ hsr.ca.gov/docs/programs/green_practices/HSR_Reducing_CA_GHG_Emissions_2013.pdf

² p. 13. (Unless otherwise noted, all references are to the report accessible at the URL above.)

³ Legislative Analyst's Office, *Funding Requests for High-Speed Rail*, April 17, 2012, p. 8

⁴ p. 13.

⁵ Legislative Analyst's Office, *Cap-and-Trade Auction Revenue Expenditure Plan*, February 2014, p. 5

⁶ p. 6.

⁷ *Id.*

⁸ *Id.*

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.*

¹² p. 11.

¹³ p. 14.

¹⁴ p. 14.

¹⁵ Legislative Analyst's Office, p. 8

¹⁶ Mikhail Chester and Arpad Horvath, *Life-cycle assessment of high-speed rail: the case of California*, Environmental Research Letters, January 2010.

¹⁷ Mikhail Chester and Arpad Horvath, *High-speed rail with emerging automobiles and aircraft can reduce environmental impacts in California's future*, Environmental Research Letters, July 2012, p. 5 [Interpolated from the chart data in Figure 1]

¹⁸ Chester and Horvath, 2012, p. 4.

¹⁹ pp. 13-15.

²⁰ Chester and Horvath, 2012, p. 9.

²¹ p. 19.

²² p. 13.

²³ p. 15.

²⁴ p. 20.

²⁵ p. 1.

²⁶ p. 5.

Paper 4

The History and Status Of The California High- Speed Rail Authority's Unlawful Funding Plan

Mark Powell

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Prepared By: by Mark Robert Powell – March 2014

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Summary:

This report, broken into five parts, traces the development of a funding plan for California's high-speed rail system from the inception of the Intercity High-Speed Rail Commission twenty-one years ago to the recent release of the California High-Speed Rail Authority's Draft 2014 Business Plan.

Part I briefly covers the development of California's former freeway plan, the statutorily required model for the development of a statewide high-speed rail network by 2020 and the means to fund its construction.

Part II details the Commission's, and later the Authority's, efforts to develop the required funding plan leading up to the Authority's 1999 decision to ignore the Commission's recommendation to secure a "base funding source" and instead pursue a "phased funding plan" that turned out to be no funding plan at all.

Part III gives the history of the delays in developing even a "phased funding" plan leading to both Governor Schwarzenegger's 2008 call for new legislation requiring a funding plan to assure that any state expenditures for the project would result in operational high-speed rail services and the legislation that ensued.

Part IV chronicles the escalating cost of the project and the Authority's attempts to circumvent the law requiring a funding plan, including attempts to scale down the project and make up for their funding shortfall with the promise of Cap and Trade funds.

Part V discusses the 2005 Statewide High-Speed Rail Program EIR/EIS that looked out to the year 2020 weighing the environmental impacts and benefits of a completed statewide high-speed rail network against a "No Project Alternative" and a "Modal Alternative" (increased funding for roads and airports) and found in favor of high-speed rail. With the Authority's own plans now silent on the date for completing the statewide system because it has no funds, with not even the smallest useable segment of high-speed rail scheduled for completion until well after 2020, and given that the funding plan for even that small segment has been found deficient by a Superior Court Judge, the paper suggest it may be time to halt the project entirely and conduct a new Statewide Program EIR/EIS reflecting the realities of 2014.

Notes Regarding the Format of this Paper:

Footnotes only cite links to on-line documents the first time the document is cited.

Previously cited footnotes are shown in brackets. For example [FN81] denotes previously cited footnote 81.

Italics are used for document titles and for quoted wording from California statutes.

About the Author:

Mark Robert Powell earned a Bachelor of Science in Chemical Engineering with Distinction from the University of Minnesota, class of 1976. Mark worked briefly in the computer industry programing and interfacing mini-computers to control complex chemical processes before moving to California to work for the Union Oil Company (Unocal) in their Chemical Division. Mark eventually became responsible for all of Unocal's chemical plants and shipping terminals in California, Oregon, and Washington overseeing the activities of 300 employees and an annual budget of \$100 million before taking a position as Manager of Strategic Planning. He chose to leave Unocal during a period of downsizing prior to the company's acquisition by Chevron Corporation to pursue a career teaching chemistry and physics. Most of his teaching career was spent teaching Advanced Placement and International Baccalaureate Physics students at a private high school in Orange County. In retirement Mark began to study and write about the failings of California's high-speed rail project on his blog, Against California High Speed Rail, eventually leading to his research work for attorneys litigating the Case of John Tos, Aaron Fukuda, and the County of Kings versus California High-Speed Rail Authority, et al.

Part I

The Authority's Mandate - A Plan Similar to California's Former Freeway Plan

The California High Speed Rail Authority ("Authority") was chartered in 1996¹. Like its predecessor, the Intercity High Speed Rail Commission ("Commission") chartered in 1993², it was tasked with "*preparation of a high-speed intercity rail plan similar to California's former freeway plan and designate an entity with stable and predictable funding sources to implement the plan.*" This mandate is still found in the California Public Utilities Code.³ A review of "California's former freeway plan" is worthwhile because the rail and freeway plans were to be "*similar*".

California's Former Freeway Plan

In 1957, shortly after the passage in 1956 of the Federal-Aid Highway Act (establishing a federal excise tax on motor fuels to help fund the Interstate Highway System), California Senate Concurrent Resolution (SRC) No. 26 – *Relative to an over-all state-wide plan of freeways and expressways for the State of California* was approved and filed with the Secretary of State on January 25, 1957. SCR 26 foresaw a need for "*the establishment of a plan for such a state-wide system of freeways and expressways*" so that "*fiscal arrangements may be worked out and properly coordinated*".⁴ The Department of Public Works was to issue the plan.⁵ The plan, entitled *The California Freeway System*, was issued on September 2, 1958 laying out 12,250 miles of freeways to be completed by 1980.⁶ The roughly 20-year plan incorporated 2100 miles of freeways, built to Interstate Highway standards, as part of the Federal-Aid Highway Act of 1956.⁷

The "planning year" 1980 was chosen because "reasonable estimates of population, land use, and vehicular travel could be projected only so far into the future".⁸ The Department of Public Works concluded their report by stating that the system outlined "is economically feasible and can be accomplished within the framework of present highway user finances within a reasonable period of years."⁹ The *California Freeway and Expressway System Act*, codifying the

¹ Senate Bill 1420 (Kopp), Approved by Governor on September 22, 1996 and filed with Secretary of State September 24, 1996, Section 185010(h). See http://www.leginfo.ca.gov/pub/95-96/bill/sen/sb_1401-1450/sb_1420_bill_960924_chaptered.pdf

² Senate Concurrent Resolution 6 (Kopp), Filed with Secretary of State July 20, 1993, Whereas section, paragraph 8. See http://www.leginfo.ca.gov/pub/93-94/bill/sen/sb_0001-0050/scr_6_bill_930720_chaptered

³ . California Public Utilities Code, Division 19.5, Chapter 1, Section 185010(h). See <http://www.leginfo.ca.gov/cgi-bin/displaycode?section=puc&group=184001-185000&file=185000-185012>

⁴ Senate Concurrent Resolution No. 26, Filed with Secretary of State January 25, 1957. Whereas Section, paragraph (e)

⁵ Senate Concurrent Resolution No. 26, Filed with Secretary of State January 25, 1957. Resolved Section, paragraph (a)

⁶ The California Freeway System, published September 2, 1958, page 25, The Freeway System, paragraph 1, Document available at UC Irvine Langson Library, Irvine CA

⁷ The California Freeway System, published September 2, 1958, page 5, Introduction, paragraph 6

⁸ The California Freeway System, published September 2, 1958, page 18, Study Methods and System Criteria, subsection Planning Period, paragraph 1

⁹ The California Freeway System, published September 2, 1958, page 32, Conclusion

recommendations of the Department of Public Works, was enacted by Legislature and signed by Governor Pat Brown on June 19, 1959.¹⁰

Each year Annual Reports by the Division of Highways, Department of Public Works, discussed the funding plan; informing the public of progress being made to implement the plan and the sources and distribution of the public's funds. Quoting from the December 1962 Annual Report:¹¹

“Highway Financing

Sound programing depends upon sound financing.

With a known number of registered vehicles, it is fairly easy to predict revenues from taxable gasoline and diesel fuel consumption, drivers' licensing and registration fees, weight fees on commercial vehicles, and taxes on for-hire trucking.

The State Constitution requires that all such highway-user funds be spent for road construction and maintenance and for the administration of the Division of Highways, Department of Motor Vehicles, and Highway Patrol. They may not be diverted for other purposes.

The largest source of funds is the six-cents-per-gallon state gasoline tax. Four cents are spent on the construction and maintenance of state highways, 1 3/8 cents on county roads and 5/8 cent on city streets.

The cities' share is distributed by the Division of Highways on a population basis, and the counties' share is distributed directly to the counties by the State Controller.

Approximately one-third of these street, road, and highway funds represent moneys returned to the State from taxes imposed on the highway user by the federal government. This money is spent on the interstate routes (matched 9 percent by state funds) and on the federal-aid primary, secondary, and urban highways (matched 42 percent by the State from user taxes).”

The Annual Reports also reported budgeted total sources and distributions in percent by source and in total dollars. The following table is combined for comparative purposes from the December 1961 and 1962 Annual Reports.

¹⁰ Statutes of California - 1958-1959, Chapter 1062.

¹¹ 16th Annual Report of the Division of Highways, Department of Public Works, December 4, 1962, page 9, Highway Financing, paragraphs 1-6.

Highway User Taxes Including Federal Aid

Source	FY 1962-1963¹²	FY 1963-1964¹³
Gas Tax	43%	42%
Motor Vehicle Fees	18%	18%
Use Fuel Tax (Diesel)	3%	3%
Transportation Tax	2%	2%
Federal Aid – Interstate (9% state match)	27%	28%
Federal Aid – Regular (42% state match)	7%	7%
Total Percent	100%	100%
 Total Dollars	 \$658,370,017¹⁴	 \$695,927,042¹⁵

It is clear that California’s freeway plan did have “*stable and predictable funding sources to implement the plan.*” The California High-Speed Rail Authority, because of missed opportunities and what might be called “wishful thinking”, never developed its required funding plan.

¹² 15th Annual Report of the Division of Highways, Department of Public Works, December 7, 1961, page 8, Table of Sources and Distributions. Document available at UC Irvine, Langson Library, Irvine CA.

¹³ 16th Annual Report of the Division of Highways, Department of Public Works, December 4, 1962, page 10, Table of Sources and Distributions. Document available at UC Irvine, Langson Library, Irvine CA.

¹⁴ 15th Annual Report of the Division of Highways, Department of Public Works, December 7, 1961, page 10, Highway Financing. Document available at UC Irvine, Langson Library, Irvine CA.

¹⁵ 16th Annual Report of the Division of Highways, Department of Public Works, December 4, 1962, page 9, Highway Financing. Document available at UC Irvine, Langson Library, Irvine CA.

Part II

Early Attempts at a Realistic High-Speed Rail Funding Plan

Twenty-one years ago Senate Concurrent Resolution 6 (Kopp) spurred the creation of the Intercity High-Speed Rail Commission when adopted by both the Assembly and Senate, and filed with the Secretary of State on July 20, 1993. It cited the need for “*the preparation of a 20-year high-speed intercity rail plan similar to California’s former freeway plan*” and “*an entity with stable and predictable funding sources to implement the plan*”.¹⁶ The California Legislature asked the Commission to prepare a financing plan that would include, but not be limited to, private funds, state general obligation bonds, revenue bonds backed by incremental increases in the gasoline tax, airport funds, and potential alternative public funding sources.¹⁷

Progress Made by the Intercity High-Speed Rail Commission – 1993 to 1996

The nine members of the Commission with backgrounds in construction, finance, banking, law, engineering, railroads, and some experience in the public sector¹⁸ completed five technical studies and a Public Participation Program¹⁹ in addition to a report summarizing the Commission’s work; *The High-Speed Rail Summary Report and Action Plan*, released December 13, 1996. The Commission recommended a network of high-speed rail similar to the one presented to the voters nearly 12 years later; a segment linking the centers of San Francisco and Los Angeles, mostly following State Highway 99 through the Central Valley before swinging southeast to run through Palmdale and with additional segments connecting to Sacramento and San Diego. It was estimated to cost between \$12.1 and \$16.5 billion for the San Francisco to Los Angeles segment and between \$19.8 and \$24.6 billion (in 1996 dollars) for the entire statewide system.²⁰

The Commission sought to establish a “base funding source” that could reliably furnish 70-85%²¹ of the capital required for construction. Quoting from the Summary Report:

“In order to qualify as a base funding source, the source must be able to substantially finance the construction of the system, secure debt against the revenue source, and provide funding irrespective of the construction status or

¹⁶ Senate Concurrent Resolution 6, Filed with Secretary of State July 20, 1993, Whereas Section, paragraph 9. See http://www.leginfo.ca.gov/pub/93-94/bill/sen/sb_0001-0050/scr_6_bill_930720_chaptered

¹⁷ Senate Concurrent Resolution 6, Filed with Secretary of State July 20, 1993, Resolved Section, paragraph 13, items 1-5

¹⁸ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Appendix B, Document available at Claremont Colleges, Honnold/Mudd Library, Claremont, CA.

¹⁹ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Executive Summary, page 1

²⁰ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Capital Cost Summary Tables, pages 3-25 and 3-27

²¹ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Major Secondary and Supplemental Funding Sources, pages 5-7 to 5-10, Secondary Funding Sources expected to each contribute less than 2% to the construction costs and Supplemental Funding Sources each expected to contribute less than 1% to the construction costs, the total was expected to close the funding gap left by the base or “primary funding source”.

operational readiness of the system. In addition, the source must have a stable and reliable revenue growth potential.”²²

After analyzing sales taxes, gas taxes, airport taxes, highway tolls, federal funding, and state funding, the Commission found that only a 5 cent increase in the state’s gasoline tax, or a ¼% increase in the state sales tax levied statewide, or a ½% increase in the state sales tax levied only in counties served by high speed rail met the Commission’s criteria to “provide a realistic means of funding the project”.²³ Of these options, the Commission seemed to favor a sales tax because of their concern over Section 1(b) of Article 19 of the California Constitution limiting the purposes for which gasoline taxes may be used.²⁴ However, the Commission left it up to the incoming California High-Speed Rail Authority to make the final decision.

Private funding was not considered a possibility because of the project’s risk, but was thought of as a way to finance extensions to Sacramento and San Diego once the San Francisco to Los Angeles portion was shown to be profitable.²⁵ In other words, future profits of an operating line could be sold to investors in return for a portion of the capital needed to construct the extensions. Also, the Commission recognized that federal high-speed rail programs amounted to only \$15 to \$25 million per year under the then-current authorizations that were scheduled to end in 1997 and therefore could not be considered a significant or predictable funding source.²⁶

With no private or federal support for the initial Los Angeles to San Francisco route, the Commission recognized an obvious fact; if Californians wanted a high-speed rail system, they would have to pay for it themselves. To implement the system, the Commission’s first recommendation was that the Authority secure the statutory authority and the base funding source for the system. Quoting from the Commission’s 1996 report: “There can be no significant progress on high-speed rail implementation nor can a private partner be selected until the voters have approved a source of base funding.”²⁷

²² *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Overview of Funding Sources, page 5-2

²³ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Base Funding Options, page 5-3

²⁴ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Base Funding Options, page 5-5

²⁵ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Financing the System – Introduction, page 5-1

²⁶ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Base Funding Options, page 5-6

²⁷ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Executive Summary, page ES-16

The California High-Speed Rail Authority – 1997 to 1999

Senate Bill 1420 (Kopp) created the High-Speed Rail Authority and stated that *“the Authority shall prepare a plan for the construction and operation of a high-speed train network for the state, consistent with and continuing the work of the Intercity High-Speed Rail Commission conducted prior to January 1, 1997.”*²⁸ Repeating verbatim words found in Senate Concurrent Resolution 6, except for the plurality of the word “sources”, SB1420 framed the mandate for the newly formed Authority: *“In order for the state to have a comprehensive network of high-speed intercity rail systems by the year 2020, it must begin preparation of a high-speed intercity rail plan similar to California’s former freeway plan and designate an entity **with stable and predictable funding sources to implement the plan.**”* (Emphasis added).²⁹

Beginning in 1997 and continuing through 1999 the Authority, using many of the same contractors used by Commission, repeated the Commission’s work and came to largely the same conclusions. In December 1999 the Authority released its 2000 Business Plan, showing capital costs of \$25 billion (in 1999 dollars) for the entire statewide system.³⁰ The plan also laid out a sixteen-year project development (6 years) and construction (10 years) schedule for the statewide system.³¹ It contemplated “specific revenue-producing segments could be completed and opened earlier in the implementation schedule. For example, the core segment from Los Angeles to San Francisco could potentially be completed at the end of the seventh year (of the 10 year construction period) with completion of the remaining segments to follow.”³²

With regard to funding the system, the Authority’s 2000 Business Plan presented two funding approaches; a “full funding scenario” based on a temporary sales tax and postulated on a decision to proceed with the statewide system in the year 2000, and a “phased funding approach” that promised to secure resources as necessary to “complete discrete phases of the project as expeditiously as possible.”³³ The 2000 Business Plan also states that in March 1999 “the Authority adopted policies that served as assumptions to guide the development of both funding strategies.” Board Meeting minutes and supporting documents from March 1999 are missing from the Authority’s website. However, the 2000 Business Plan does refer to policies adopted by the Authority in March 1999 and itemizes these clearly in the plan.³⁴ Pertinent items from the plan are:

²⁸ Senate Bill 1420 (Kopp), Section 185032. See: http://www.leginfo.ca.gov/pub/95-96/bill/sen/sb_1401-1450/sb_1420_bill_960924_chaptered.pdf

²⁹ Senate Bill 1420 (Kopp), Section 185010(h). See: <http://www.leginfo.ca.gov/cgi-bin/displaycode?section=puc&group=184001-185000&file=185000-185012>

³⁰ 2000 Business Plan, Section 2.3, Table 2.1, Capital Cost by Segment. See 2000 Business Plan http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2000_FullRpt.pdf

³¹ 2000 Business Plan, Section 2.2, Figure 2.3, Implementation and Construction Schedule

³² 2000 Business Plan, Section 2.2, Phase 3: Final Design and Construction

³³ 2000 Business Plan, Section 6.1, Two Funding Approaches, paragraph 1.

³⁴ 2000 Business Plan, Section 6.2, Financial Plan Policies

“The financial plan shall be prepared with a statewide temporary sales tax as the state revenue source, to the extent that state public funds are needed for the capital costs of building the high-speed train network, and only for so long as they are needed.”

“The financial plan shall presume that the state will fund the base system fully and that no local funding participation shall be assumed in the base system.”

“The Authority shall diligently seek partnership funding from the federal government to construct the high-speed train system. **However, federal grant funding shall not be included in the Authority’s financial plan until a funding commitment is expressed by either the Congress or the administration.** To the extent possible, advisable, and cost effective, the Authority should seek federal loans or credit enhancements.” (Emphasis added)

With the December 1999 deadline for release of the 2000 Business Plan approaching, the Authority was forced to select a preferred funding strategy. Drafts of the plan’s Executive Summary, which included a section on funding to be voted on during the November 17, 1999 board meeting, began to circulate. In his November 9th draft of the Executive Summary, addressed to Board members Leonard and Bates, Executive Director Mehdi Morshed writes: “While the Authority has sufficient information and analyses to conclude that a high-speed train is a smart investment and should proceed, we do not believe asking the people of California to make a full-funding commitment for the project is a prudent course of action at this time for the following reasons.” The Executive Director’s reasons included; 1) necessary environmental work to define with more specificity the corridors, station locations, and cost of the system, and 2) two years of substantive discussions with the private sector and the federal government “which will likely reduce the investment the people of California will need to make in the system”.³⁵ In Director Morshed’s revised draft, written for the entire Board on November 15th, the last words of the prior draft were rewritten as “which will likely produce major reductions in the investment the people of California will need to make in the system.”³⁶

Resolution HSRA 99-8 *Motions on Recommendations to the Authority to Become Part of the Business Plan* detailing a preferred funding strategy was brought up at the November 17th Board Meeting and approved unanimously (9-0).³⁷ The motion “recommended to the Governor and the Legislature that California not proceed to fund the project fully in 2000, either through legislative action or by placing a full-funding proposal on the November 2000 ballot for the

³⁵ Memorandum from Executive Director Mehdi Morshed to Bill Leonard and Dr. Ernest Bates (Board Members), Subject: Conclusions and Recommendations, dated November 9, 1999, Executive Summary attachment, page 5. Located in California State Archives and not found on the Authority’s website.

³⁶ Memorandum from Executive Director Mehdi Morshed to Chairman and Authority Board Members, Subject: Draft Business Plan, dated November 15, 1999, Executive Summary attachment, page 5. Located in California State Archives and not found on the Authority’s website.

³⁷ FAX from Executive Director Mehdi Morshed to Congressman Jim Costa, Resolution HSRA 99-8 *Motion on Recommendations to the Authority to Become Part of the Business Plan*. Located in California State Archives and not found on the Authority’s website.

voters to decide.” It did recommend an expenditure of \$25 million over two years for further program level environmental work. If the system still proved viable, it recommended spending \$350 million over the subsequent three to four years to achieve full environmental clearance. In addition, it called for “an aggressive statewide effort to increase federal funding for both conventional and high-speed trains in California.”

Wording regarding potential savings to Californians did appear in the 2000 Business Plan Cover Letter. The Letter speculated that “greater private sector funding, coupled with federal funding, would decrease greatly the amount Californians would need to invest, perhaps to only about one-third of the total project cost”.³⁸ Such speculation also made its way into the plan’s Executive Summary which said, “it is reasonable to anticipate that the federal government would become a financial partner in this project, reducing the capital needs to be borne by the California taxpayer.”³⁹

Both funding strategies made it into the 2000 Business Plan, but only the recommended strategy, the “phased funding plan,” has been followed by the Authority since 2000. Stating that Californians would perhaps need to pay for “only about one-third of the total project cost”, although totally unsupported in the plan, fit well with subsequent legislation scheduling a vote on issuance of \$9 billion in high-speed rail bonds in November 2004.⁴⁰ The Authority’s hoped-for significant private funds or grants from non-existent federal programs to create a “phased-funding plan” ignored the Authority’s mandate still found in Section 185010 of the Public Utilities Code, which reads as follows:

“185010(h) In order for the state to have a comprehensive network of high-speed intercity rail systems by the year 2020, it must begin preparation of a high-speed intercity rail plan similar to California's former freeway plan and designate an entity with stable and predictable funding sources to implement the plan.”

Leery of levying more taxes on Californians, Governor Gray Davis never supported a sales tax that could have created a stable and predictable funding source to pay for high-speed rail. Instead, he would support the “car tax” to help solve the state’s fiscal woes and be recalled from office in 2003.

³⁸ 2000 Business Plan Cover Letter addressed to Governor Gray Davis and Members of the California Legislature, page 1, final paragraph. See http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2000_FullRpt.pdf

³⁹ 2000 Business Plan Executive Summary, Options and Recommendations section, page 3

⁴⁰ Senate Bill 1856 (Costa), Safe Reliable High-Speed Passenger Train Bond Act, Division 3 of Streets and Highway Code, Chapter 20, Article 3, SEC. 4(a) See: http://www.leginfo.ca.gov/pub/01-02/bill/sen/sb_1851-1900/sb_1856_bill_20020919_chaptered.pdf

Part III

A Funding Plan That Never Materialized

Delayed a Funding Plan – 2000 to 2008

In the wake of the 2000 Business Plan's recommendation to pursue a "phased funding plan" and sunset provisions in existing law calling for termination of the Authority on June 30, 2001 unless a specified financial plan was approved by the Legislature or the voters prior to that date, AB1703 *High-speed rail service* (Florez) was enacted into law on September 28, 2000 extending the termination date of the Authority until December 31, 2003 and modifying section 185032 of the Public Utilities Code regarding plan submission⁴¹.

With still no funding plan in sight, SB796 *High-Speed Rail Authority* (Costa) was enacted into law on September 19, 2002 eliminating the termination date of the Authority and obsolete provisions of existing law relating to submission of a plan to voters by 1998 or 2000. It instead authorized the Authority to submit financial plans to the Governor and to the Legislature.⁴² On that same day, SB1856 *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century* (Costa) became law. It called for the issuance of \$9.95 billion in state general obligation bonds to be submitted to the voters on November 2, 2004. Section 1 of SB1856 called for initially linking San Francisco and the Bay Area to Los Angeles to serve as "*the backbone*" of the statewide system and speculated that it could be in "*limited operation by 2008.*" The bond funds were "*intended to encourage the federal government and private sector to make a significant contribution towards construction of the high-speed train network.*"⁴³

Two year later, now with Governor Schwarzenegger having replaced the recalled Gray Davis, but with still no commitments of federal or private funds to construct a high-speed rail project, SB1169 *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century* (Murray) was signed into law on June 24, 2004 pushing out the voter approval of rail bonds to November 7, 2006⁴⁴. Two years later, and again with no commitments of federal or private funds, AB713 *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century* (Torrico) was signed into law on June 27, 2006 pushing out the voter approval of rail bonds to November 4, 2008⁴⁵.

⁴¹ Assembly Bill 1703 (Florez) *High-speed rail service*; Legislative Council's Digest, section (1), paragraph 2; Public Utilities Code Section 185020(h); Public Utilities Code Section 185032(a)(1). See:

http://www.leginfo.ca.gov/pub/99-00/bill/asm/ab_1701-1750/ab_1703_bill_20000928_chaptered.pdf

⁴² Senate Bill 796 (Costa) *High-Speed Rail Authority*; Public Utilities Code Section 185034(8) and (9).

See: http://www.leginfo.ca.gov/pub/01-02/bill/sen/sb_0751-0800/sb_796_bill_20020919_chaptered.pdf

⁴³ Senate Bill 1856 (Costa), the *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century*; Section 1 paragraphs (b), (c), and (d). See: http://www.leginfo.ca.gov/pub/01-02/bill/sen/sb_1851-1900/sb_1856_bill_20020919_chaptered.pdf

⁴⁴ Senate Bill 1169 (Murray) the *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century*; SEC 5 http://www.leginfo.ca.gov/pub/03-04/bill/sen/sb_1151-1200/sb_1169_bill_20040624_chaptered.pdf

⁴⁵ Assembly Bill 713 the *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century*; SEC 4 http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0701-0750/ab_713_bill_20060627_chaptered.pdf

Governor Schwarzenegger's Qualified Support for Rail Bonds

Costa's original bond measure of 2002, and the two subsequent measures extending the vote on the bonds, spoke very little about funding plan requirements as a precursor to the issuance of the bonds. In fact, the words "funding plan" or "financial plan" do not appear anywhere in these pieces of legislation. The requirements for a "*rail plan similar to California's former freeway plan*" ...*with stable and predictable funding sources to implement the plan*" (still found in Section 185010(h) of the Public Utilities Code today) were written into the enabling legislation for the Commission and for the Authority, not the bond legislation of 2002, 2004, or 2006.

Governor Schwarzenegger's budget for 2008-2009, released in January 2008 called for: "Modifications to the Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century, currently scheduled for the November 2008 ballot (\$10 Billion) to ensure that appropriate financing is available to begin building the project."⁴⁶

The requirements of the funding plan were further clarified in the Governor's 2008-2009 Budget Revisions, released in May 2008. The Revised Budget language included the following passages:

"The administration will be proposing amendments to the *Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century* to ensure an appropriate balance between **assuring that expenditures of the bond funds will result in operational high-speed rail services** and providing the flexibility needed to attract federal and local government, as well as private sector, participation in funding, constructing, and operating the system. The following changes to the bond legislation are being proposed (Emphasis added).

Limit the amount of bond funding that may be used for engineering work, environmental studies needed to obtain permits, and preservation of right-of-way to enable project costs to be more accurately determined and project risk to be reduced before other parties' funds are fully committed. This will help pave the way for public and private partners to participate in the project, while limiting the amount of bond funds at risk.

Before any construction or equipment purchase contracts can be signed for a portion of the system, there must be a complete funding plan that provides assurance that all funding needed to provide service on that portion of the system is secured. (Emphasis added)⁴⁷

⁴⁶ January 2008 Budget Highlights, Strategic Growth Plan section, page 29. See: <http://www.dof.ca.gov/budget/historical/2008-09/governors/highlights/documents/HINF.pdf>

⁴⁷ Governor's May Budget Revision 2008-09, Business Transportation and Housing section, pages 27-28. See: http://www.dof.ca.gov/budget/historical/2008-09/may_revision/documents/BS-BTH.pdf

Taken in context with reference to “operational high-speed rail services” the word “service” must be taken as a reference to operational high-speed rail service. Clearly the Governor’s support for the high-speed train project was contingent on assurances that the Authority would have secured funds to complete a useable segment of the high-speed rail project before committing funds to begin construction or to purchase equipment.

Requirements of a Funding Plan and Other Tax Payer Protections – Assembly Bill 3034

In response the Governor’s January 2008 request for modifications to the existing rail bond act “to ensure that appropriate financing is available to begin building the project”, Assembly Member Cathleen Galgiani introduced AB3034, *Safe Reliable High-Speed Passenger Train Bond Act for the 21st Century*, on February 22, 2008. In what amounted to revisions of Costa’s original 2002 bill, Galgiani’s bill was amended as it progressed through the Assembly and then the Senate. Revisions dealing with construction of the high-speed train system and its funding are discussed in this section.

The Assembly’s Revisions:

AB3034, as Introduced in Assembly February 22, 2008⁴⁸ (Authors/Coauthors/Sponsors – 4)

2704.04(c)– Deleted the requirement that a segment from San Francisco Transbay Terminal to Los Angeles Union Station (SF-LA) be “*fully funded*” before allowing bond funds to be spent on other segments and then revised other listed segments to incorporate pieces of the SF-LA segment.

2704.08(c) – Inserted requirement stating that “*in selecting each specific segment for construction and prior to awarding a construction contract, the authority shall have a detailed funding plan for that segment that identifies the full cost of constructing the segment and the sources of all revenues needed to complete construction of the segment*”

2704.08(d) – Inserted a requirement that in prioritizing segments the Authority “*shall give priority to those segments that require the least amount of bond funds as a percentage of total cost of construction, shall consider the utility of that segment for other passenger rail services, and shall ensure that any other passenger service provided on that segment will not result in any operating or maintenance cost to the authority.*”

The reference to a “*funding plan*” is made only once in Galgiani’s original bill, but that is once more than in Costa’s original bill. Also, the reference to prioritizing segments based on “*the utility of that segment for other passenger rail services*” may later have been cited by the Authority as justification for building an Initial Construction Segment that could be used by

⁴⁸ AB 3034, as Introduced in Assembly February 22, 2008. See:
http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080222_introduced.pdf

Amtrak. As will be discussed later in more detail, the Authority had previously adopted their May 2007 Phasing Plan outlining possible early use of some segments by Metrolink (LAUS to Palmdale) and potential cost sharing with both Metrolink and Caltrain. The Authority's Executive Director, Medhi Morshed, speaking of this possibility before the Assembly Select Committee on Rail Transportation on April 3, 2008, said:

“We did a Phase 1 work which is out of the 800 miles where do we build first and the most promising place to build the Phase 1 would be between San Francisco and Anaheim. That's where you begin with close to about a \$1 billion per year surplus. And within that over a ten year period we are going to build that in segments and we are going to look at segments that are going to get some initial benefits. And that looks like most likely it is going to be San Francisco to San Jose segment which we can actually make improvements in conjunction with the CalTrain people and they can begin to use the system while we are building it, a similar situation exists between Los Angeles and Anaheim, and probably Los Angeles and Palmdale”⁴⁹

Amtrak usage of high-speed rail track is never brought up in either the May 2007 Phasing Plan or Director Morshed's remarks made before the Select Committee on Rail Transportation.

AB3034 as Amended in Assembly April 9, 2008⁵⁰ (Authors/Coauthors/Sponsors – 5)
Section 2704.04(b)(1) – Listed segments (A)-(F) now referred to as “*corridors*”. This is the first use of the word “*corridor*” with respect to high-speed rail.

Section 2704.04(b)(2) – Added “*financing obligations*” to operations and maintenance as costs that must be covered before using revenue to fund construction of the system. This seems to be a reference to using revenues to pay potential private investors in return for their up-front construction capital.

Section 2704.08(d) – Deleted “*each specific segment*” and replaced with “*segments*” as if envisioning that multiple segments could be constructed concurrently (i.e. when building from SF to LA). This interpretation is consistent with Executive Director Morshed's remarks of April 3, 2008.

⁴⁹ Assembly Select Committee on Rail Transportation, April 3, 2008, Disc 1 of 1 #08-0403C1. Director Morshed's remarks begin at 1 hour 32 minutes 30 seconds on disc.

⁵⁰ AB 3034, as Amended in Assembly April 9, 2008. See:

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080409_amended_asm_v98.pdf

AB3034 as Amended in Assembly April 21, 2008⁵¹(Authors/Coauthors/Sponsors – 9)

Section 2704.04(b)(2) – Inserted wording stating nothing in this section shall prejudice authority’s selection of alignment from the Central Valley to the Bay Area in its certification of the EIR.

The Senate’s Revisions:

In May 2008 when the Governor released his May Budget Revision, and with more clarity than in January, he called for “assuring that expenditures of the bond funds will result in operational high-speed rail services.” This seems to have resulted in numerous and significant amendments to AB3034 as it progressed through the Senate.

AB3034 as Amended in Senate June 26, 2008⁵²(Authors/Coauthors/Sponsors – 36)

Section 185033 – Added to the Public Utilities Code to require the Authority’s 2008 Business Plan to be submitted to Legislature not later than October 1, 2008. The contents of the plan to be submitted were clearly enumerated, including a requirement the Authority include “*an estimate and description of the total anticipated federal, state, local, and other funds the authority intends to access to fund the construction and operation of the system.*”

Section 185035 – Added to Public Utilities Code requiring a Peer Group (duties and membership detailed) to evaluate the Authority’s funding plan.

Section 2704.01 – Amended to include defined terms including: (f) “*Corridor*” and (g) “*Segment*”.

Section 2704.06 – Added wording to tighten control of the Legislature over release and use of bond proceeds.

Section 2704.08(a) – With regard to no more than one-half of construction costs to be derived from bonds, the word “*segment*” was deleted and the words “*corridor or usable segment thereof*” were added. This is the first use of the term “*usable segment*”. It would be used 23 more times in this amended version of AB3034.

⁵¹ AB 3034, as Amended in Assembly April 21, 2008. See:

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080421_amended_asm_v97.pdf

⁵² AB 3034 as Amended in Senate June 26, 2008. See:

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080626_amended_sen_v96.pdf

Section 2704.08(c) – Added extensive wording strengthening the requirement of a “*funding plan*” and clearly delineating its requirements. This is one of five references in AB3034 to a “*funding plan*”.

Section 2704.08(d) – Added a new paragraph with extensive wording requiring a second “*funding plan*” and clearly delineating its requirements.

Section 2704.08(e) – Added a new paragraph with requirement Authority promptly inform Governor and the Legislature of material changes that would jeopardize completion of the corridor as previously planned.

Section 2704.08(f) – Added projected ridership and revenue and the need to test high-speed trains at 220 mph to the criteria for prioritizing the selection of corridors or usable segments for construction.

AB 3034 as also Amended in Senate as of July 7, 2008⁵³ (Authors and Coauthors -36)

185035(d) – Added to require the Authority to provide the Peer Review Group any and all information they might request.

Section 2704.01(g) – The defined term “*Segment*” is changed to “*Usable Segment*”. Definition is unchanged from previous definition. Only the word “*usable*” is added. This seems to indicate that when used previously, a “*segment*” was assumed to be “*usable*”. This change makes that assumption undeniable. After being redefined, this term is used twenty-five times in AB3034.

Section 2704.04(b)(1) – added language allowing bond expenditure for capital costs “*for the usable segment of the high-speed train system between San Francisco Transbay Terminal and Los Angeles Union Station and Anaheim. Once construction of the San Francisco-Los Angeles usable segment is fully funded, all remaining funds described in this subdivision shall be used for eligible capital costs, as described in subdivision (c)*”.

Here, the amendment’s author restored language that had been deleted from Costa’s 2002 bill when Galgiani’s AB3034 was introduced February 22. The text then continues with previously existing wording . . . (c), *for the following high-speed train system corridors*: [corridors are then listed] Wording is clumsy at best because the listed corridors include San Francisco to Los Angeles (broken into two pieces). Still, one could argue that “*used for eligible capital costs*” means “*used for eligible capital costs of listed corridors other than those already funded*”(i.e. San Francisco to Los Angeles)

⁵³ AB 3034 as Amended in Senate July 7, 2008. See:

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080707_amended_sen_v95.pdf

Section 2704.08(a) The words “*track and station costs*” used immediately before the words “*of each corridor or usable segment*” are deleted, which clarifies that not more than 50% of the total cost of construction of each a corridor or usable segment thereof was to derive from bond funds rather than simply referring to “*track and station costs.*” This is an important change as the Authority seeks to build merely track and stations on the 130 mile long Initial Construction Segment in the Central Valley.

AB 3034 as Amended in Senate as of July 10, 2008⁵⁴ (Authors and Coauthors -38)

2704.04.(a) – Added words saying that approval of bond measure shows intent of Legislature and people of California to initiate construction of a high-speed train system “*that connects San Francisco Transbay Terminal to San Jose to Merced to Fresno to Bakersfield to Palmdale to Los Angeles, and to Anaheim...consistent with EIR’s of Nov 2005 “and July 9, 2008”*”. Wording seems to indicate that SFTBT to LAUS/ANA was to be the first corridor built, not merely some short portion of it. This is consistent with 2008 Business Plan then due out October 1, 2008, and importantly it is consistent with wording of the May 2007 phasing decision made by the Authority.

2704.04.(b)(1) – Changed the words “*usable segment*” to “*corridor*” in reference to the high-speed train system connecting SFTBT to LAUS and Anaheim. Again, this seems to imply that this corridor was to be built as a singly funded project. Again, this is consistent with 2008 Business Plan that was due out October 1, 2008

2704.04.(b)(2) – Deleted requirement to “*fully fund*” SF to LA before funding other eligible capital costs found in 2704.04.(b)(1) and inserted new paragraph 2704.04.(b)(2) as follows: *Upon a finding by the authority that expenditure of bond proceeds in corridors other than the corridor described in paragraph (1) would advance the construction of the system and would **not have an adverse impact on the completion of Phase 1 of the high-speed train project, as adopted by the authority in May 2007** (Emphasis added) and described in paragraph (1), the authority may request funding for capital costs, and the Legislature may appropriate funds described in paragraph (1) in the annual Budget Act or separate statute, to be expended for the following high-speed train corridors:*

This is the first use of the term “*Phase 1*” and references it “*as adopted by the Authority in May 2007*”. It was at their May 2007 Board Meeting that the Authority debated what to build first, and by a 5-2 vote, chose San Francisco to Los Angeles/Anaheim.

⁵⁴ AB 3034 as Amended in Senate July 10, 2008. See:

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080710_amended_sen_v94.pdf

Relevant Background Information About the May 2007 Phasing Plan

The May 23, 2007 Board Meeting Minutes in a section entitled “*Project Phasing*” reveal the reasons for the Authority’s choice of San Francisco to Los Angeles/Anaheim. Executive Director Morshed recommended this first phase selection because “**This segment**” (emphasis added) would be most likely to attract outside investment, have an operating surplus and it would be long enough to develop a train system that could travel at high speeds.”⁵⁵ It is then referred to seven times in the minutes as a “starter segment.”

Another important document listed on the Authority’s website as part of the May 2007 Board Meeting Materials is a document entitled *The California High-Speed Train Network – Next Steps to Construction*. The link accessing this document is entitled *May 2007 Phasing Plan*. This seven-page document refers to Phase 1 as the “backbone” of the statewide network and describes how it must be built in stages coordinated to be completed at roughly the same time. For instance, work on Mountain Crossings “must also commence early” because of the complexity of the tasks and “are likely to be the last completed”. In the Central Valley, “the construction, equipment, manufacturing, testing, and commissioning (of high-speed trains) will take considerable time and are in the critical path of the project. Therefore, work must start as soon as possible between Merced and Bakersfield.”⁵⁶

The term “critical path” is a common engineering term. When a large project is broken into smaller projects and the large project is essentially unusable until all smaller projects are completed, the smaller project requiring the most time to complete is referred to as being on the “critical path”. Meeting Minutes record after lengthy discussion and some dissention (principally from Member Crane who was concerned over the lack of “financial commitments from different groups to have the financing for the project ready before construction begins” and Member Schenk who wanted Los Angeles to San Diego “included in the first phase of construction”) Member Stapleton moved to approve the “project phasing recommendations” and the motion carried 5-2 with Crane and Schenk voting “no”. It appears the “project phasing recommendations” being approved were those voiced by Morshed and written into the document entitled *The California High-Speed Train Network – Next Steps to Construction*.

⁵⁵ May 2007 Authority Board Meeting Notes, page 4, “Project Phasing” See:

<http://www.cahighspeedrail.ca.gov/assets/0/152/198/4cfc4b61-80b2-4175-b183-d5f37681fc71.pdf>

⁵⁶ *The California High-Speed Train Network – Next Steps to Construction*; The link accessing this document is entitled *May 2007 Phasing Plan*; “backbone” reference on page 3; timing of construction of Mountain Crossing and Merced to Bakersfield references on page 6; “critical path” reference found on page 6. See:

http://www.hsr.ca.gov/docs/brdmeetings/2007/brdmtg0507_phaseplan.pdf

In addition to the May 2007 Phasing Plan and Meeting Minutes, the May 2007 Meeting Materials contain links to a Financing Plan Report⁵⁷ and Financing Plan Presentation.⁵⁸ In all of these documents, there is never a reference to developing a Funding Plan or Business Plan for a sub-section of Phase 1. The Authority's documents speak of funding being an issue and certainly they would have liked to have been able to start with a smaller "starter segment", but anything smaller would evidently not have met Director Morshed's three criteria. Any reasonable person reading the May 2007 Meeting Minutes on Project Phasing, the phasing plan itself, the Financing Plan Report, and the Financing Plan Presentation can only conclude that the Authority envisioned the entire San Francisco to Los Angeles/Anaheim "starter segment" as a single project and was seeking to create a single funding plan for it.

Throughout 2007 and up until its publication on October 27, 2008, the Authority's financial consultant, Infrastructure Management Group, worked on a funding plan entitled *Financial Plan for the California High Speed Rail Authority- San Francisco to Anaheim Segment*.⁵⁹ Again, nowhere in this financial plan is there a discussion of funding the construction of anything short of the San Francisco to Los Angeles/Anaheim route, which in now commonly referred to as Phase 1 of the statewide high-speed train system.

Additional evidence showing the Authority's intent to build Phase 1 as one project with one funding plan is found in the 2008 Business Plan, which presented one financing plan for this phase and concluded with these words: "This Business Plan demonstrates how the system's backbone link (Los Angeles/Anaheim to San Francisco) can be financed."⁶⁰

Therefore, when section 2704.04.(b)(2) was amended to include the words "*completion of Phase 1 of the high-speed train project, as adopted by the authority in May 2007*" the Authority was bound by statute to develop a funding plan for all of Phase 1 as a single project.

Section 2704.08(b)(1) – the word "*paragraph (1)*" of subdivision (b) of Section 2704.04 was deleted because now subdivision (b) contained two paragraphs and "*any eligible capital cost on each corridor, or usable segment thereof*" were described with both paragraphs together. This is important because the first paragraph now spoke of a "*corridor*" of a high-speed train system between SFTBT and LAUS/ANA and the second paragraph spoke of "*completion of that Phase*

⁵⁷ *Preliminary Funding Strategy and Finance Plan: Bay Area to Anaheim Segments-Report*. Accessed from the Authority's website with a link entitled *May 2007 Financing Plan Report*. See:

http://www.hsr.ca.gov/docs/brdmeetings/2007/brdmtg0507_financialrpt.pdf

⁵⁸ *Preliminary Funding Strategy and Finance Plan: Bay Area to Anaheim Segments-Presentation*. Accessed from the Authority's website with a link entitled *May 2007 Financing Plan Presentation*. See

http://www.hsr.ca.gov/docs/brdmeetings/2007/brdmtg0507_financialplan.pdf

⁵⁹ IMG's Financial Plan for the California High-Speed Rail Authority San Francisco to Anaheim Segment, dated October 27, 2008. See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2008_SRC_FinPlan.pdf

⁶⁰ 2008 Business Plan, page 21, section entitled Finance Plan. See.

http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2008_FullRpt.pdf

1 of the high-speed train project, as adopted by the authority in May 2007 and described in paragraph (1).”(Emphasis added) Once again, “*as adopted by the authority in May 2007*”, San Francisco Transbay Terminal to Los Angeles Union Station/Anaheim was to be ONE project funded by ONE funding plan.

AB 3034 as Amended in Senate as of August 6, 2008⁶¹ (Authors and Coauthors -38)

185033 of the Public Utilities Code was changed to move up the date of the 2008 Business Plan from October 1 to September 1. That plan was actually released November 7, four days after the ballot measure was voted on.

SEC. 4. Section 1 of Chapter 697 of the Statutes of 2002, as amended by Section 1 of Chapter 71 of the Statutes of 2004, was repealed and rewritten into SEC 8.

SEC. 5. Section 2 of Chapter 697 of the Statutes of 2002, as amended by Sections 1 and 2 of Chapter 44 of the Statutes of 2006, was repealed and rewritten in to SEC 9.

SEC. 6. Section 3 of Chapter 697 of the Statutes of 2002, as amended by Section 3 of Chapter 44 of the Statutes of 2006, repealed and was rewritten in to SEC 9.

SEC. 7. Section 4 of Chapter 697 of the Statutes of 2002, as amended by Section 4 of Chapter 44 of the Statutes of 2006, is repealed. This section mostly pertains to the ballot wording in the bond act and not the funding.

2704.04(a) and (b) – Amended to delete an important, but perhaps redundant passage:

...”upon appropriation by the Legislature in the annual Budget Act or separate statute, shall be used for (A)planning the high-speed train system and (B) capital costs, described in subdivision (c), ~~for the usable segment corridor of the high-speed train system between San Francisco Transbay Terminal and Los Angeles Union Station and Anaheim~~” This may have just been a cleanup of wording because paragraphs (c) does not specifically list as a single segment SFTBT to LAUS/ANA. Instead, it inserts a new paragraph (2) regarding the plan “*adopted by the authority in May 2007*”, renames old paragraph (2) as (3) leaving wording identical except for now referencing paragraph (2) regarding the May decision rather than paragraph (1).

AB3034, as amended in the Senate August 6th appears to be very close, if not identical to the bill eventually approved and signed into law. The text of the August 6th version, taken from the

⁶¹ AB 3034 as Amended in Senate August 6, 2008. See:

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080806_amended_sen_v93.pdf

same government website as all other versions, no longer uses ~~strikeout~~ to show newly-deleted wording nor does this version single out new text with *italics*.

The Legislative Council's Digest pointing out recent amendments makes no mention of changes to sections 2704.04(a) and (b). However, the rewrite is extensive and, depending on a reader's viewpoint, the August 6th version may be interpreted as 'watering down' the July 10th version with regard to "*completion of Phase 1 of the high-speed train project, as adopted by the authority in May 2007.*" Others might simply view the changes as a cleanup of wording and point to the fact that the Legislative Council's Digest makes no reference to these changes. Footnotes cited previously for both the July 10th and the August 6th amended version of AB3034 allow for a direct comparison.

2704.07 – This new section was added: "*The authority shall pursue and obtain other private and public funds, including, but not limited to, federal funds, funds from revenue bonds, and local funds, to augment the proceeds of this chapter.*" Significant only to the extent that it was added to stress a point.

2704.08(f)(4) – Wording was added regarding corridor or usable segment selection to include: "*the extent to which the corridors include facilities contained therein to enhance the connectivity of the high-speed train network to other modes of transit, including, but not limited to, conventional rail (intercity rail, commuter rail, light rail, or other rail transit), bus, or air transit.*" This seems in line with the Phasing Plan adopted in May 2007 where parts of the SF to LAUS/ANA that could have early utilization by Metrolink and Caltrain might be given priority.

Executive Director Morshed's Description of the Authority's Actual Funding Plan

At the time a requirement for a funding plan was being written into AB3034, Mehdi Morshed, Executive Director of the Authority, gave voice to the Authority's actual funding plan in testimony made April 3, 2008 at a hearing before the Assembly Select Committee on Rail Transportation. Quoting from the hearing recording:

"We anticipate that the phase 1 of the high speed train system, once it is constructed, after 2-3 years of operation, we'll begin generating over a billion dollars a year in revenue surplus. And that revenue surplus is being used as a way of basically developing a financing for the project. We have a financing plan for the project that Phase 1 is estimated to cost about 30 billion dollars. We're assuming about 9 billion dollars from the state. We assume about a similar amount from the federal government. And the last third of the cost is going to be covered by the private sector utilizing the surplus revenues and the other benefits that the private sector would get from a high-speed train. So that's how the financing of the project is and you know that's going to we anticipate moving forward."

Executive Director Medhi Morshed, April 3, 2008⁶²

⁶² Assembly Select Committee on Rail Transportation, April 3, 2008, Disc 1 of 1 #08-0403C1
Morshed remarks begin at 1 hour 30 minutes 54 seconds on disc.

Morshed’s thoughts found their way into the 2008 Business Plan with a similar level of assurance that they would materialize; none at all. Nearly six years later “none at all” is exactly the amount of private funds secured by the Authority and “none at all” is the amount of federal funds they have been told by Congress to expect in the future.

Part IV

Soaring Costs Magnify the Inadequacies of the Authority's Funding Plan

The 2008 Business Plan

AB3034 mandated that “*the authority shall prepare, publish, and submit to the Legislature, not later than September 1, 2008, “a revised business plan” that was to contain “an estimate and description of the total anticipated federal, state, local, and other funds the Authority intends to access to fund the construction and operation of the system.”*”⁶³ The plan was finally published on November 7, 2008.⁶⁴ This was two months later than statutorily required and after passage of Proposition 1A (enacting statutes of AB3034). It showed all \$9 billion in state high-speed rail bonds along with “targeting” \$24 billion in federal, private and local sources to fund the \$33 billion capital cost of Phase 1.⁶⁵ \$12-\$16 billion of federal funding was explicitly shown.⁶⁶ This was done despite the Authority’s policy going back to 1999, stating that “federal grant funding shall not be included in the Authority’s financial plan until a funding commitment is expressed by either the Congress or the administration.” [See FN34]

Another questionable practice was combining the \$9 billion in bonds, which should have been considered “year-of expenditure dollars”, with costs expressed in 2008 dollars. This deception was corrected one year later when the Authority in its December 2009 Report to the Legislature expressed capital costs in “year-of-expenditure dollars” as demanded by both the Department of Transportation and the Legislature. The result was an updated cost of \$42.6 billion in YOE dollars, still with only \$9 billion in state bonds.⁶⁷

Where once the Authority had speculated that Californians would need to invest, perhaps only about a third of the total project cost [See FN38] and the Authority had been committed to a policy of not including federal grant funding in a financial plan “until a funding commitment is expressed by either the Congress or the administration,” [See FN 34] the Authority now projected that Californians would need to invest only about a fifth of the total project cost and was showing \$17-\$19 billion in federal funding⁶⁸; none of which was at the time a commitment expressed by either the Congress or the Administration.

⁶³ AB 3034 adding Section 185033 to the Public Utilities Code. See: http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_3001-3050/ab_3034_bill_20080826_chaptered.pdf

⁶⁴ The Cover Letter accompanying the 2008 Business Plan was undated. See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2008_CoverLtr.pdf. The cover Letter for 2008 Business Plan link The news release announcing the plan was dated November 7, 2008. See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2008_NewsRelease.pdf. The link to the News Release.

⁶⁵ 2008 Business Plan, Finance Plan section, page 21. See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2008_FullRpt.pdf

⁶⁶ 2008 Business Plan, Finance Plan section, Figure 26, page 21

⁶⁷ December 2009 Report to the Legislature, Cost of the System, Cost Summary, page 84. See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2009_Legis_FullRpt.pdf

⁶⁸ December 2009 Report to the Legislature, Paying for the System, Financial Plan Overview, page 92

The Draft and Revised 2012 Business Plans

The capital cost situation and prospects for funding would only worsen for the Authority. By November 2011, the capital costs in the Draft 2012 Plan for the San Francisco to Los Angeles/Anaheim phase had ballooned to between \$98.5 and \$117.6 billion in year-of-expenditure dollars.⁶⁹ Costs for the extensions to Sacramento and San Diego went unreported in that Draft 2012 Business Plan. Some \$3.3 billion of one-time, ARRA funding (“stimulus funds”) was now committed by the federal government. But the Revised 2012 Business Plan, released in April 2014, called for much more. Consistent with previous plans, the Authority provided ranges of costs dependent upon the alignment chosen. The eventual alignment chosen is dictated by the environmental permitting process and this process was incomplete in April 2012, as it still is in March 2014. The Authority deals with the problem of a high cost alignment by glossing over the high-end cost estimates and elaborating only on the low-end cost possibility.

The Revised 2012 Business Plan went one step further and elaborated only on the low-end cost (“planning cost scenario”) of a scaled-down Phase 1 where high-speed trains would share track with Caltrain in the Bay Area and Metrolink trains in the Los Angeles Basin. The Authority called this project “Phase 1 Blended”. Phase 1 Blended was estimated to cost \$68.4 billion in YOE dollars, of which \$41.7 billion would come from yet-unsecured “federal support” and \$13.1 billion would come from the private sector. With only \$3.3 billion shown as secured federal support and no committed private investment the total funding gap was \$51.5 billion.⁷⁰

The planning cost scenario rises to \$91.4 billion and funding gap rises to \$74.5 billion if the Full Build of Phase 1 turns out to be necessary to create a system in compliance with other provisions of AB3034 (i.e. travel times, minimum headway, etc.).⁷¹ The April 2012 Plan provides no figure comparable to the \$91.4 billion figure for the possible high-end cost of this project. However, the plan does provide a high-end cost number comparable to the \$68.4 billion number for the planning case scenario of Phase 1 Blended, \$79.8 billion.⁷² Scaling \$91.4 billion by the ratio of \$79.8/\$68.4 yields an estimated high-end cost for the Full Build of Phase 1 of \$106.6 billion and the Authority’s funding gap grows to \$89.7 billion.

The Authority solved some of the April 2012 plan’s funding shortfall by declaring they would build a profitable Initial Operating Segment (IOS) from Merced to San Fernando in spite of

⁶⁹ Draft 2012 Business Plan, released November 2011, Chapter 8 Funding and Financing, page 8-2. See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2012Draft_web.pdf

⁷⁰ Revised 2012 Business Plan, sum of figures found in Exhibits 7-15 *Total sources and uses for IOS to Bay to Basin assuming private-sector investment in 2023* (2013 to 2026) (YOE dollars in millions) and 7-17. *Sources and uses—Phase 1 Blended with private-sector capital* (YOE dollars in millions) See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2012_rpt.pdf

⁷¹ Revised 2012 Business Plan, Executive Summary, page ES-14

⁷² Revised 2012 Business Plan, Exhibit 7-20. *Total sources and uses of funds—increased construction costs* (YOE dollars in millions)

having at least a \$20.3 billion federal funding shortfall for this work.⁷³ The April 2012 plan pushed off the larger funding shortfall into the future.

Before reviewing the Authority's inadequate funding plan for the IOS, it is worth reviewing how the project and its funding plan have evolved since the inception of the Intercity High-Speed Rail Commission twenty-one years ago.

- Twenty-one years have passed since the Commission was charged with preparing “a 20-year high-speed intercity ground transportation plan”. [See FN2]
- The plan first envisioned connected Los Angeles to San Francisco at a cost of between \$12.1 and \$16.5 billion (1996 dollars) along a route stretching a distance of between 398 and 448 miles depending on alignment.⁷⁴ It was to be in revenue service by fiscal year 2005/6.⁷⁵ By April 2012, that vision had translated into a \$91.4 to \$106.6 billion project, 520 miles in length to be completed in 2033.⁷⁶
- The Authority currently makes no cost or completion date estimates for the extensions linking high-speed rail to Sacramento and San Diego.⁷⁷ A reasonable guess made by scaling cost and years of construction time by 800/520 (the length of the statewide system/the length of Phase 1) yields a cost estimate of up to \$164 billion and a completion date of 2044; nearly 40 years after Statewide Program EIR was certified.
- The legislative mandate to the Commission and later to the Authority to develop a “*high-speed intercity rail plan similar to California's former freeway plan and designate an entity with a stable and predictable funding source to implement the plan*” has evolved from dedicated inflation indexed voter-approved taxes that only voters could later decide to repeal into a plan that hopes for (1) massive federal grants from non-existent federal transportation programs, (2) massive private participation when not one penny of private money has been forthcoming in the last twenty-one years, and (3) billions of dollars in local government participation in an era when many of California's cities teeter on the edge of bankruptcy.

Against this backdrop, the Authority's April 2012 plan proposed a funding plan for their IOS connecting Merced to San Fernando that includes \$7.1 billion of the \$8.2 billion in remaining unspent rail bonds.⁷⁸ The estimated cost for the IOS ranges from \$26.9 billion to \$31.3 billion

⁷³ Revised 2012 Business Plan, Exhibit 7-10. *Sources and uses for completing the IOS* (YOE dollars in millions)

⁷⁴ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Capital Cost Summary Table 3.3, page 3-25

⁷⁵ *High Speed Rail Summary Report and Action Plan*, Published by Intercity High-Speed Rail Commission December 13, 1996, Project Revenue Financing, page 5-9

⁷⁶ Revised 2012 Business Plan, Exhibit ES-3. Summary of each phased implementation section, page ES-13

⁷⁷ Revised 2012 Business Plan, Exhibit 2-6. Projected milestones for completing the environmental review process/potential construction completion, page 2-28

⁷⁸ Revised 2012 Business Plan, sum of state bond funds shown in Exhibit 7-9 IOS-First Construction funding sources (YOE dollars in millions) and Exhibit 7-10 Sources and uses for completing the IOS (YOE dollars in millions)

expressed in 2011 dollars.⁷⁹ The plan later details the low end (planning cost scenario) of this cost range expressed in year-of-expenditure dollars and arrives at a figure of \$31.3 billion.⁸⁰ The plan does not detail the cost to construct the IOS in year-of-expenditure dollars for the high cost estimate. However, if the low cost estimate expressed in YOE dollars is multiplied by the ratio of \$31.3/\$26.9, the high cost is estimated to be \$36.4 billion in YOE dollars. The Authority's funding plan should cover the high number, \$36.4 billion, and not merely the low number of \$31.3 billion if taxpayers are to be reasonably assured that the Authority will be able to complete the IOS.

The April 2012 plan notes the following committed funding sources for the IOS:

Federal Grants Secured	\$3.3 billion
State Bonds (Prop. 1A)	<u>\$2.7 billion</u>
	\$6.0 billion

This leaves a shortfall of \$30.4 billion if the funding plan is to support the high end of the range of current cost estimates. Interestingly, the Authority's current funding plan calls for:

Federal support	\$20.3 billion
State Bonds (Prop. 1A)	\$4.4 billion
Other Funds	<u>\$.7 billion</u>
	\$25.4 billion

When combined with the \$6 billion in committed funds, these sources exactly match the funds needed for the low cost scenario, but not enough to support the high cost scenario. In other words, even when the Authority simply makes up numbers, they do not make the numbers high enough to ensure the IOS could actually be built. Moreover, because the \$20.3 billion in federal support is merely a wish on the Authority's part, not supported by any existing federal programs or commitments, this funding plan was found to be out of compliance with the requirements of Proposition 1A.⁸¹

⁷⁹ Revised 2012 Business Plan, Exhibit 3-3 Cost to Construct IOS- Central Valley to San Fernando Valley (base year fiscal year 2011 dollars), page 3-8

⁸⁰ Revised 2012 Business Plan, sum of figures tallied in Exhibits 7-9 (IOS First Construction Funding Sources) and 7-10 (Sources and Uses for Completing the IOS)

⁸¹ On August 16, 2013, Sacramento Superior Court Judge Michael Kenny in the case Tos, Fukuda, and the County of Kings versus California High-Speed Rail Authority Et al. ruled in favor of the Plaintiffs

The Authority's Tiny Fig Leaf – Cap and Trade Funds

The Authority seeks to fill the funding gap for the IOS with the promise of Cap and Trade funds. Since “federal support” and “other funds” are as yet uncommitted by any party, the funding gap to be filled by Cap and Trade funds throughout the remaining construction period (2014-2021) is stunningly large.

Required Committed Funds (high end of cost range)	\$36.4 billion
Federal Grants Secured	- \$3.3 billion
State Bonds (Prop. 1A)	<u>- \$7.1 billion</u>
Funding Gap	\$26.0 billion

Into this gap, Governor Brown supports the allocation of \$.250 billion in Cap and Trade funds in this year's state budget to build the IOS when the funding gap averages \$3.25 billion/year each year over the Authority's estimated eight-year construction period. On the face of it, this one-year allocation can be dismissed because it covers less than 8% of the first year's funding gap. Moreover, even if this allocation were to be approved by the legislature in FY14, there is no guarantee that other Cap and Trade funds will be available and/or allocated in future years.

It is worth comparing the current Cap and Trade funding scheme to the requirements for a base funding source once laid out by the Commission in 1996: [FN 22]

“In order to qualify as a base funding source, the source must:

- be able to substantially finance the construction of the system;
- secure debt against the revenue source;
- provide funding irrespective of the construction status or operational readiness of the system; and
- have stable and reliable revenue growth potential.”

With regard to first criteria, “be able to substantially finance the construction of the system”, the \$.250 billion in Cap and Trade funds source fails because it amounts to less than 1% of the total funding gap of the IOS.

With regard to the second criteria, “secure debt against the revenue source” the Cap and Trade fund source fails because a one-time assured revenue cannot be used to secure debt.

With regard to the third criteria, “provide funding irrespective of the construction status or operational readiness of the system,” environmentalists will surely argue that Cap and Trade funds are required to go towards projects that reduce greenhouse gas emissions within the state by the year 2020. As the IOS will not even be in operation until 2022, and will result in substantial and irreversible emissions during its eight-year construction period, Cap and Trade funds also fail this criteria.

Lastly, with regard to the fourth criteria, little is known about the stability, reliability, or growth potential of Cap and Trade funds. However, plaintiffs are currently in court arguing that Cap and Trade fees amount to a tax, and that California's Global Warming Act (AB32) authorizing these mandatory fees was passed without the necessary two-thirds majority called for by Proposition 13 causing this test to also fail.

The Draft 2014 Business Plan – The recently released Draft 2014 Business Plan does not address the funding shortfalls associated with IOS construction or later development of the system (i.e. Bay to Basin, Phase 1 Blended, or Phase 1). The cost of the project is largely unchanged as are the committed sources of funding.⁸² However, previous plans have shown a range of costs, a low-end or “planning cost scenario” and a high-end cost, dependent on the eventual alignment that is chosen. The Draft 2014 Plan eliminates all discussion of high-end costs even though the plan clearly points out that the project level environmental work needed to select a final alignment is incomplete for all but the Merced to Fresno section.⁸³

In another attempt to disguise true costs, the “Phase 1 Full Build” option, mentioned twenty times in the April 2012 plan and estimated to cost \$23 billion more than the Phase 1 Blended option, is not mentioned once in the Draft 2014 plan. The term “Phase 1 Blended” used in the previous April 2012 plan is replaced with the term “Phase 1” in all but four references in the draft 2014 plan. This oversight (that it was left in at all) may be attributed to the fact that the plan is a “draft” and will probably be corrected in the final 2014 plan to remove all traces of “Phase 1 Blended” in an effort to lull the reader into forgetting that Phase 1 is now a degraded Phase 1 compared to previous plans.

The Authority is faced with an intractable funding problem of their own making. They created the problem in December of 1999 when they swung toward favoring a “phased-funding approach” instead of asking the citizens of California to approve a temporary sales tax to create a stable and predictable funding source to implement their plan. Instead, the Authority made a ‘bad bet’ that the federal government would develop a program to fund high-speed rail projects as they had once funded the construction of the Interstate Highway System; a federal excise tax on gasoline paid by motorists in each state and sent back to the states to fund interstate highway projects. No such federal high speed-rail financing program has been created in the nearly fifteen years that the Authority has been waiting for it and no such program is included in the recently passed 2014 federal budget. None is even contemplated.

⁸² Draft 2014 Business Plan, *EXHIBIT 3.5 YEAR-OF-EXPENDITURE COST ESTIMATES*: See: http://www.hsr.ca.gov/docs/about/business_plans/FINAL_Draft_2014_Business_Plan.pdf

⁸³ Draft 2014 Business Plan, Exhibit 1.2 – Completed and Projected Milestones for the Environmental Review Process by Project Section, page 26

Part V

The Authority's Funding Plan Mandate Regarding Environmental Work

Environmental Clearances Required in the Funding Plan Mandates of AB3034

The passage of Assembly Bill 3034 rewrote section 2704.08.(c) of the Streets and Highway code to read:

“No later than 90 days prior to the submittal to the Legislature and the Governor of the initial request for appropriation of proceeds of bonds authorized by this chapter for any eligible capital costs on each corridor, or usable segment thereof, identified in subdivision (b) of Section 2704.04, other than costs described in subdivision (g), the authority shall have approved and submitted to the Director of Finance, the peer review group established pursuant to Section 185035 of the Public Utilities Code, and the policy committees with jurisdiction over transportation matters and the fiscal committees in both houses of the Legislature, a detailed funding plan for that corridor or a usable segment thereof. (2) The plan shall include, identify, or certify to all of the following:[List of Items A through K follows]”

Item (K), the last of the referenced items, reads as follows:

“The authority has completed all necessary project level environmental clearances necessary to proceed to construction.”

When making its initial request for appropriation of proceeds of bonds in 2012 and seeking to begin construction of the Initial Operating Segment running from Merced to San Fernando, the Authority's plan was clearly out of compliance with this requirement and a court has so ruled. [FN81]

The Authority has treated this as a mere technicality and now touts the fact that it has achieved environmental clearance for the Merced to Fresno section where it seeks to begin IOS construction. However, for good reasons, its funding plan to begin building the IOS from Merced to San Fernando is required by statute to certify that the Authority has completed all environmental clearances for the 300-mile IOS. This would include clearances for the segments from Fresno to Bakersfield, Bakersfield to Palmdale, and Palmdale to Los Angeles. The Authority's Draft 2014 Business Plan admits it still does not have these clearances and projects they will not have all of them until the summer of 2015.⁸⁴ The Authority and the public will not have reasonable assurances that completing the IOS is even feasible until all environmental clearances are complete.

⁸⁴ Draft 2014 Business Plan, Exhibit 1.2 – Completed and Projected Milestones for the Environmental Review Process by Project Section, page 26

In addition to passing the test of feasibility, the required environmental work includes completing engineering work up to the 15% level and choosing a final alignment through each section. Both of these completed tasks make it possible to more reasonably estimate costs and the required funds to complete the project.

Quoting from the Certified EIR for the Merced to Fresno section:

After completion of the Statewide Program Level EIR, “The next step in the HST development process includes additional engineering and design and preparation of project EIR/EISs for all HST project sections. This Merced to Fresno Section Project EIR/EIS (Tier 2) evaluates proposed alignments and stations in site-specific detail to provide a complete assessment of the direct, indirect, and cumulative effects of the proposed action, considers public and agency participation in the scoping process, and was developed in consultation with resource and regulatory agencies, including EPA and USACE. FRA and the Authority intend this document to be sufficient to support Section 404 permit decisions and Section 408 permit decisions (as applicable) for alteration/modification of completed federal flood risk management facilities and any associated operation and maintenance, and real estate permissions or instruments (as applicable). Both the EPA and USACE issued letters identifying the Hybrid Alternative as the preliminary LEDPA (March 23, 2012, and March 26, 2012, respectively)”⁸⁵

Statute dictates that ALL environmental clearances be in place as part of the funding plan before the Authority may ask the Legislature for an appropriation of bond funds. Were it not for the law, common sense would dictate this requirement to simply assure Californians the Authority could reasonably expect to build from point A to point B with a reasonable estimate of costs before committing funds for final engineering work and construction.

The Statewide Program EIR/EIS

The Statewide Program EIR/EIS (Statewide EIR) certified in 2005 looked at the a high-speed train system linking all of California’s major metropolitan areas (the Bay Area, Sacramento, the Los Angeles Basin, and San Diego) and compared the environmental costs (“impacts”) and benefits of the statewide system to a No Project Alternative and a Modal Alternative.⁸⁶ Pertinent excerpts from the Statewide EIR are quoted below describing the No Project, Modal, and High-Speed Train Alternatives.

The No Project Alternative

“For the No Project Alternative, both existing and future conditions (2020) are considered. The No Project Alternative represents the state’s transportation system (highway, air, and conventional rail) as it existed in 1999–2000 and as it would be in 2020 with the addition of transportation projects currently programmed for implementation (already in funded

⁸⁵ California High-Speed Train Project EIR/EIS – Merced to Fresno Section, page 1-2. See: http://www.hsr.ca.gov/docs/programs/merced-fresno-eir/final_EIR_MerFres_1Purpose.pdf

⁸⁶ Statewide Program EIR/EIS, Summary, Alternatives Including High-Speed Train, page S-3. See: http://www.hsr.ca.gov/docs/programs/eir-eis/statewide_final_EIR_vol1summary.pdf

programs/financially constrained plans) according to the State Transportation Improvement Program (STIP), regional transportation plans (RTPs) for all modes of travel, airport improvement plans, and intercity passenger rail plans. The No Project Alternative addresses the geographic area serving the same intercity travel market as the proposed HST Alternative (generally, from Sacramento and the San Francisco Bay Area, through the Central Valley, to Los Angeles and San Diego)."

The Modal Alternative

"The Modal Alternative is described as a set of hypothetical improvements representing a possible response to projected intercity travel demand that will not be met by the No Project Alternative. The improvements described for each Modal Alternative component are capacity oriented (e.g., additional traffic lanes for highways with associated interchange reconfiguration and ramp improvements; additional gates and runways for airports). Overall, the highway improvements assumed under the Modal Alternative represent a total of over 2,970 additional lane miles (mi) (4,780 lane kilometers [km]). Two additional highway lanes would be required on most intercity highways, and as many as four additional lanes would be needed to meet forecasted demand in certain segments. Projected airport improvements would include over 90 new gates and five new runways statewide."

The High-Speed Train Alternative

"State-of-the-art, electrically powered, high-speed, steel-wheel-on-steel-rail technology is being considered for a proposed system that would serve the major metropolitan centers of California, extending from the San Francisco Bay Area and Sacramento, through the Central Valley, to Los Angeles and San Diego. State-of-the-art safety, signaling, and automated train-control systems would be used. By 2020, the proposed service would include approximately 86 weekday trains in each direction to serve the study area intercity travel market, with 64 of the trains running between northern and southern California and the remaining 22 trains serving shorter distance markets. Most passenger service is assumed to run between 6:00 a.m. and 8:00 p.m. The proposed system would be capable of speeds in excess of 200 mph (322 kph), and the projected travel times would be designed to compete with air and auto travel. For example, the projected travel time by HST between San Francisco and Los Angeles would be just under 2 hrs and 30 min, and between Los Angeles and San Diego it would be just over one hour. The route representing the highest return on investment from the Authority's Business Plan is used to represent the HST Alternative for general comparison and evaluation with the other system alternatives. This representative system was forecast to carry between 42 and 68 million passengers in 2020, with the potential to accommodate higher ridership by adding trains or using longer trains. For a conservative assessment of potential environmental impacts, the higher ridership forecast is used in describing the proposed HST Alternative and its impacts, and is referred to in the Program EIR/EIS as the "representative demand" ridership. However, for resource topics where the high-end ridership forecasts would result in potential benefits (e.g., energy, air quality, and travel conditions), additional analysis is included to address the impacts associated with the low-end forecasts....

....The cost to implement the representative HST train system, which reflects a similar network of alignment and station options to that presented in the Authority’s Business Plan, is estimated to range between \$33 billion and \$37 billion (2003 dollars), depending on the alignment and station options selected. The cost estimate includes right-of-way, track, guideway, tunneling, stations, and mitigation.”

The three alternatives were then evaluated and compared regarding their key environmental impacts and benefits. The statewide high-speed train network was then chosen as the preferred alternative. A table was presented showing its benefits and impacts, including:⁸⁷

HST Benefits

- Congestion reduction on intercity highways
- Reduction in time of travel
- Decrease in injuries and fatalities on highways
- Overall savings in passenger costs
- Air quality benefit
- Energy benefit

HST Environmental Impacts

- Moderate to high visual impacts especially in scenic open space
- High impact on noise
- Right of Way needs impacting 2,445-3860 acres of farmland
- Adverse impact on 1201-1568 acres of sensitive habitat, wetlands and special status species
- Adverse impact on floodplains, streams, and lakes
- Potential impacts on 1-6 wildlife refuges
- Medium to high ranking for potential impacts on archaeological resources and historical properties
- Impacts on farmlands

The Statewide high-speed train alternative won-out over the other alternatives, but that is NOT what the Authority seeks to build and not even one usable segment of the statewide system is currently scheduled to be completed by 2020; the year used in the Statewide EIR for comparing the three alternatives. There are synergies that come with building the whole statewide system. For instance, the route between Los Angeles and Sacramento mostly uses track that also runs between Los Angeles and San Francisco. Extending the system to Sacramento substantially increases environmental benefits while the increase in environmental impacts is minimal. Likewise, connecting Los Angeles to San Diego also connects travelers from Sacramento or San Francisco with San Diego. It is synergies like these that caused ridership estimates to double when extensions were added to Sacramento and San Diego according to studies done by the

⁸⁷ Statewide Program EIR/EIS, Table S.6-1 Summary of Key Environmental Impacts and Benefits for System Alternatives, pages S-11 to S-16

Intercity High-Speed Rail Commission.⁸⁴ Similar results are detailed in a Ridership and Revenue study conducted for the Authority as part of their 2008 Business Plan.⁸⁸ In fact, the Commission's final report showed the project only having a net positive economic benefit to Californians if the extensions to Sacramento and San Diego were built.⁸⁹ The same synergies exist today.

The central problem with the Authority's incremental approach to funding and construction of the system is that benefits accrue mostly with completion of the entire system while environmental costs, as well as construction costs, accrue approximately proportional to miles of track constructed. For this reason, it is impossible to believe that a Merced to Fresno or even a Merced to San Fernando project could obtain an environmental clearance on its own. Merced to Fresno and the other segments encompassing the IOS can only achieve clearance as part of the statewide system that was compared to the "No Project Alternative" and the "Modal Alternative". Californians have no assurance that the statewide system, or even Phase 1 linking San Francisco to Los Angeles, will ever be built because the Authority has never acquired the tens or hundreds of billions of dollars necessary for their construction. Californians living in the Central Valley face an environmental catastrophe with no assurance of any benefits associated with high-speed train travel.

Years of delay and a lack of high-speed rail funds have left Californians facing an alternative worse than anything envisioned in the Statewide EIR if the Authority is allowed to start accessing bond funds to build in the Central Valley. The "No Project Alternative" will be realized when 2020 arrives, billions of dollars will have been spent destroying lives and property in the Central Valley, and the benefits of traveling by high-speed trains will not have been experienced by any Californians.

Mark R. Powell
March 2014

⁸⁸ CALIFORNIA HIGH-SPEED TRAIN PROJECT RIDERSHIP AND REVENUE FORECASTS, RIDERS AND REVENUE FOR HIGH-SPEED TRAIN FULL SYSTEM, YEAR 2030, page 11.
See: http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2008_SRC_RiderRevenue.pdf

⁸⁹ High Speed Rail Summary Report and Action Plan, Published by Intercity High-Speed Rail Commission December 13, 1996, Table 7.8 Total Discounted Costs and Economic Benefits (Year 2000-2050)

2014 Business Plan RECORD DETAIL

Record Date :	4/7/2014
Submission Date :	4/7/2014
Affiliation Type :	Businesses and Organizations
Interest As :	Businesses And Organizations
Submission Method :	Letter
First Name :	Lou
Last Name :	Thompson
Business/Organization :	California High-Speed Rail Peer Review Group
City :	
County :	
Zip Code :	00000
Stakeholder Comments/Issues :	
Draft Business Plan Comment Type :	
Attachments :	FINAL SIGNED PDF VERSION.pdf (6 mb)

California High-Speed Rail Peer Review Group

Lou Thompson
Chairman

Walter Bell

Diane Eidam

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April 6, 2014

The Honorable Darrell Steinberg
Senate President Pro Tem
State Capitol Building
Room 205
Sacramento, CA 95814

The Honorable John Perez
Speaker of the Assembly
State Capitol Building
Room 219
Sacramento, CA 95814

The Honorable Bob Huff
Senate Republican Leader
State Capitol Building
Room 305
Sacramento, CA 95814

The Honorable Connie Conway
Assembly Republican Leader
State Capitol Building
Room 3104
Sacramento, CA 95813

Dear Honorable Members:

The California High-Speed Rail Authority issued its Draft 2014 Business Plan, "Connecting California," on February 7, 2014. The Authority also issued its "Project Update Report to the California Legislature" on March 1, 2014. In accord with our responsibility to review and comment on reports and funding plans published by the Authority, the Peer Review Group has reviewed these documents as well as the background documents supporting the 2014 Business Plan. We met with the Authority's management team on March 14, 2014 to discuss these documents. We would like to express our appreciation for the time and effort the Authority has spent in responding to our questions and requests for information.

In overall summary, we believe that the Authority has continued to make progress in the structure and evaluation in its Business Plans. The important topics are now covered and the method for presenting risk and potential variation in outcomes (Monte Carol simulation) is much better developed. A partial solution to the financing challenge that would stabilize the

Authority's planning base is now on the table. Demand forecasting has been improved through updated data and additional model refinements. The operations and maintenance cost (O&M) model is more detailed and offers a better approach to relating costs to the volume of operations. Thus far the Authority has been able to meet the staffing challenge.

This generally favorable assessment of the 2014 Business Plan is qualified by the fact that actual experience so far is limited. One bid has been advertised and awarded below the initial budget, but the final design for that project is not complete and no construction has actually commenced. Demand forecasts are based on an improved demand model using better data, but only actual operation will show how Californians will respond to high-speed trains. Litigation beyond the control of the Authority could delay the project and cause costs to rise significantly. For all these reasons, the improved estimates and forecasts still have a significant range of uncertainty and it is not yet clear how confident we can be that the outcome will fall within the boundaries indicated by the Monte Carlo analyses. This will only be resolved with experience.

The 2014 Draft Business Plan does raise a series of issues that we will discuss in more detail below. The Authority does not yet have a source of available, committed funding that will fully close the roughly \$20 billion financing gap to complete the IOS as it is currently defined, though the Governor has proposed a number of possible sources, such as use of cap-and-trade funds, which would close a part of the gap. The blended system from San Francisco to San Jose raises a number of complex issues involving the interactions among Caltrain, High-Speed Rail and freight operations that deserve continuing attention. There are plans to develop the demand modeling further for the 2016 Business Plan and the results should be appropriate for planning purposes, but more participation in model development from potential operators and investors should be invited in order to reflect commercial pricing and costing issues. The Authority's business model continues to evolve, but more detail on the roles and responsibilities of the Authority, the State and the private sector will be needed if private capital is to be attracted. The Authority believes it can meet the September 30, 2017 deadline to spend American Recovery and Reinvestment Act of 2009 (ARRA) money if it is not further impeded by litigation or funding delays. The decision in the 2014 Business Plan to defer single seat service through Los Angeles Union Station to Anaheim should be revisited in the 2016 Business Plan. Attention to these issues in the near-term will be important to resolving potential future problems.

Our more detailed comments are below. Please let us know if you have any questions or need clarification on any of the discussion in this letter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Louis S. Thompson', with a stylized flourish at the end.

Louis S. Thompson
Chairman
California High-Speed Rail Peer Review Group

cc: Hon. Mark DeSaulnier, Chair, Senate Transportation and Housing Committee
Hon. Ted Gaines, Vice Chair, Senate Transportation and Housing Committee
Hon. Bonnie Lowenthal, Chair, Assembly Transportation Committee
Hon. Eric Linder, Vice Chair, Assembly Transportation Committee
Brian Kelly, Secretary, Department of Business, Transportation and Housing
Mac Taylor, State Legislative Analyst
Ken Alex, Director, Governor's Office of Planning and Research
Dan Richard, Chair, California High-Speed Rail Authority
Jeff Morales, Chief Executive Officer, California High-Speed Rail Authority
Members, California High-Speed Rail Peer Review Group

Finance. The table below summarizes the Authority’s projections for the completion and cost of the various system segments.

Segment	Location	Miles	Year of Completion	Cost (Billion 2013\$)	Cost (Billion YOES)
IOS	Merced-San Fernando	300	2022	27.8	31
Bay to Basin	San Jose to San Fernando	410	2026	42.5	51
Phase I Blended	LA Union Station to San Francisco Transbay Terminal	5250	2028	55.9	68

Source: "Connecting California," 16, 34 and 35.

Against these amounts, the Authority potentially has access to \$9.95 billion from Proposition 1A and \$3.479 billion in Federal grant funding (\$2.551 billion from ARRA expiring if unspent by Sept 30, 2017 and \$928.6 million in FY 2010 appropriations that does not expire).¹ Of the Proposition 1A money, \$0.95 billion is allocated for local rail purposes and is not available for high-speed rail construction. Another \$1 billion in Proposition 1A funding has been allocated for projects on the “bookends” (San Jose to San Francisco and the Los Angeles area) where advance improvements such as electrification of Caltrain or a straight-through routing at the Los Angeles Union Station will be built. Local authorities are matching the Proposition 1A money. Thus, the Authority has about \$12.5 billion (of which the release of about \$5 billion will depend on finding new matching sources). This leaves, according to the Authority, “uncommitted funds” of \$20.934 billion needed to complete the IOS.²

In the Revised 2012 Business Plan, the Authority argued that the gap could partly be filled by use of funds from the Greenhouse Gas Reduction Fund (GGRF) generated from the state’s Carbon emissions cap-and-trade program. This proposal has since been developed in the Governor’s 2014-2015 budget proposals to include \$250 million from 2014-2015 funding, plus \$400 million that will be paid back from the 2013-2014 budget, plus one-third of all GGRF amounts beginning in the 2015-2016 budget year.³

It is difficult to estimate the amounts that the GGRF will actually yield. The Legislative Analyst’s Office (LAO) stated that “[s]everal economists who have evaluated ...[the] cap-and-trade program have estimated that, over the life of the program ... total revenue for the program through 2020 could be roughly \$15 billion.”⁴ This could vary significantly depending on the percentage of allowances that are given away rather than auctioned and on the market price of each permit. It is also not clear whether this is measured in YOES or constant \$: if it is constant 2013\$, the Authority would recover somewhat more of the YOES cost of the IOS. In addition, the LAO cites a possible range of \$12 billion to \$45 billion depending on a large number of

¹ An additional \$16 million has been spent on PTC design and analysis in the Caltrain corridor.
² See “Connecting California,” page 53.
³ See <http://www.lao.ca.gov/Publications/Detail/2953>, accessed March 17, 2014, for a description of the Cap-and-Trade program.
⁴ Legislative Analyst, “The 2014-2015 Budget: Cap-and-Trade Auction Revenue and Expenditure Plan,” page 4, February 2014

assumptions. If the actual number ended up at the higher end of the range, this could also close the gap accordingly.

Authorization for the current system beyond 2020 is unclear, so projections after that date are not fully established. Based on the \$15 billion estimate cited by the LAO, the total funding proposed by the Governor would reduce the IOS funding gap by \$5.65 billion, leaving roughly another \$15 billion that will have to come from another source of near-term funding, such as other existing or new Federal programs or added State sources. The Authority has also noted that the design and scope of the IOS is a matter of the Authority's definition and not a matter of law. If the Authority could reduce the cost or scope of the IOS, the immediate gap would also fall.

There are three established Federal programs for which the HSRA program might qualify: the Railroad Rehabilitation and Improvement Financing (RRIF) program administered by the Federal Railroad Administration; the Transportation Infrastructure Finance and Innovation Act (TIFIA) administered by the Federal Highway Administration; and, the Transportation Investment Generating Economic Recovery (TIGER) grants administered by the Office of the Secretary of the U.S. DOT.

The RRIF program makes only loans, mostly to freight railroads, though loans have been made to Amtrak or other rail passenger station projects. The total authorization of the RRIF program is \$35 billion, of which \$7 billion is restricted to smaller freight railroads and a total of \$15 billion has been committed. Because the program consists of a large number of individual loan transactions, there is no stable annual level of funding.

The TIFIA program makes loans or guarantees loans for a part of the cost of a project, mostly for highway or intermodal programs, though the program could extend to projects that include rail components (for example, the Transbay Terminal project in San Francisco received a \$171 million loan). TIFIA loans generally are less than \$1 billion, though the largest was \$1.6 billion for the replacement for the Tappan Zee Bridge in New York State. The President's Budget calls for an annual funding level for TIFIA of \$1 billion annually through FY 2018.

The TIGER grant program has averaged around \$700 million annually since its inception in 2009. One of the criteria for TIGER grants is matching funding by other agencies. TIGER grants ranged between \$1 million to slightly over \$20 million per project in 2013, and are widely distributed across all states. The President's budget requests TIGER funding of \$1.25 billion annually through FY 2018.⁵

Finally, the President's budget requests authorization for a new grant program to support "high-performance passenger rail networks,"⁶ for which the California HSR program would presumably qualify. If approved, the funding would be \$1.3 billion annually through FY 2018. This funding would have to be distributed over an unknown number of applicants.

The three loan programs need annual Congressional appropriations for which the outcome is difficult to foresee with any confidence. The outcome of the high-performance passenger rail

⁵ For TIFIA and TIGER, see U.S. DOT Budget Highlights for FY 2015 at page 4.

⁶ U.S. DOT Budget Highlights for FY 2015 at page 29.

networks program is also unpredictable as it requires both a new authorization and appropriation. The share that the HSRA program might receive in all four programs is also unclear.

The Authority has proposed the use of private investment as a significant way of filling the longer term gap (\$37 billion in YOES or \$28 billion in 2013\$) that must be filled between 2022 and 2028 in order to complete the system. The Authority's cash flow forecasts support a role for private investment in one form or another after completion of Phase I. Even assuming successful experience in proving out the Authority's forecasts, this is not likely to occur until 5 years or so after commissioning the system, or about 2027. This will also be influenced by the Authority's business model that we discuss below.

This issue has unclear prospects. **The Legislature may want to request a specific study of the funding prospects of the GGRF program and the variables that may affect it in order to have a clearer idea of the amounts that may be raised and the potential amounts that could contribute to the HSRA funding gap.**

Blended System issues. Access to San Francisco's Transbay Terminal has posed a challenge to the program from the beginning. The ideal engineering outcome – a new, four track system separating HSR from Caltrain and freight service – was problematic because of its high cost and environmental impact. An alternative approach was adopted that blends the services of Caltrain and HSR on the same two track system, mostly within the existing right-of-way but with specific additions of passing tracks where needed and with the possibility of incremental increases in capacity when justified by demand. When combined with electrification of the Caltrain lines, paid half-and-half by Caltrain and HSRA, this approach should work to serve the needs of both systems at least through the first decades of the Phase I Blended system. In a number of our previous letters, the Group has supported the blended system approach; our comments below are aimed at improving its implementation.

The blended approach will require a true joint effort by Caltrain and HSRA with full participation of other parties including the Transbay Joint Powers Authority (that has the responsibility for the connection from the current Caltrain terminus at 4th and King Streets to the Transbay Terminal) and the Union Pacific Railroad (that has freight operating rights on the same lines). There are a number of issues on which the interests of the parties must be explicitly balanced if the blending is to work:

- Currently, Caltrain uses a platform height of 8" above rail. This means that boarding/de-boarding requires stepping up/down from the floor of the train (25" above rail), which can impose delays and risks of tripping and falling, especially when the needs of disabled passengers must be accommodated. The result is longer and less reliable schedules. The low platform height is dictated by the regulations of the California Public Utilities Commission (PUC) that require platforms to be no higher than 8" on tracks that may also carry freight trains. Unless a waiver from this regulation is granted, or expensive track work is installed, Caltrain will be limited to low platforms. At its current frequency of services, the lack of level boarding is manageable (if undesirable), but it will become much less tenable when Caltrain frequencies are increased and HSR trains are added.

- Under current plans, the floor of HSR trains will be about 50” above the rails, which is typical practice for most of the world’s HSR systems and consistent with Amtrak’s plans in the Northeast Corridor. Caltrain is experiencing rapid demand growth, a process that will accelerate when service to the Transbay Terminal is inaugurated. Caltrain’s plans call for acquiring new bi-level, electric multiple-unit rolling stock. Since the existing Caltrain coaches have a 25” floor level, consistency would suggest a 25” floor level for the new equipment. This would mean that platforms for the two systems would be at different levels, making transfers within station more difficult to arrange. This might be manageable at many common stations where Caltrain and HSR could have separate platforms, but the platform disparity would be more serious at the Transbay Terminal because the number of platforms is limited. As a result, routing of traffic into and out of the station will be more complex, and dispatchers will not have the flexibility to send either system to all platforms when delays or operating problems would otherwise dictate. One approach, turning a number of Caltrain services at 4th and King and limiting the number of Caltrain services to the Transbay Terminal, has been suggested, but would pose restrictions for Caltrain’s access to the Transbay Terminal.
- The basic standards of the PUC for electric catenary wire call for a clearance of 22 feet 6 inches above the rail. On the one hand, both Caltrain and HSR may want a lower catenary height in order to reduce construction cost for which the PUC will have to grant permission: on the other hand, the Union Pacific and port interests may want to protect the hypothetical possibility of future freight cars requiring even more clearance. HSR’s current electrification designs are appropriate for HSR-only operations and may not be acceptable for use in the Caltrain area. There are a number of specific locations where Caltrain’s clearance is already below 22 feet 6 inches, but there is no generally agreed height limitation.
- Positive Train Control (PTC) is a requirement of Federal law. Facing this mandate, Caltrain developed its own system – CBOSS – that is now being implemented. CBOSS may not be appropriate for use by HSR trains. If so, HSR trains may have to deal with two signal systems. In addition, the Union Pacific Railroad will have to operate in the same territory so will have to have conforming signal systems in its locomotives.

None of these problems is impossible to resolve, albeit at added investment and operating cost by one or more of the parties. There is nothing unique about having multiple freight and passenger operators on a single line and there is experience in the U.S. and Europe with resolving the normal issues. All parties in the blended area are aware of the issues and there has been full cooperation among them.

We are concerned, however, that near-term decisions could be made by the parties acting separately that would ultimately compromise the performance of the system. For example, a decision by Caltrain not to plan for at least 25” platforms, which would provide an essential approach to level boarding, would lead to increased delays and uncertainty that could become

unmanageable when Caltrain frequencies increase to meet the rapidly growing demand, especially that caused by the opening of the Transbay Terminal. This problem would get worse when four HSR trains per hour are added to the blended system in 2026. Caltrain will definitely need an expanded fleet, and bi-level cars are an efficient way to meet the need. That said, a decision to buy 25" floor level, bi-level coaches would mean that Caltrain and HSR would be committed to operating on incompatible platforms, which would add rigidity to a system that will be challenged for capacity. This problem could be alleviated if Caltrain ordered coaches that can serve both platform levels or if it adopted a uniform 50" platform, but either solution would clearly add investment costs above those planned. In all cases, the design of the electrification for Caltrain will need PUC approval and will need to consider the interests of all of the operators on the line.

This is a complex issue involving technology, investment, system performance and sequencing including the interests of a number of parties. Clearly there is no perfect answer and it is actually a problem resulting from success in attracting more passengers. **We recommend that the Legislature request periodic joint reports from Caltrain, HSR and the Union Pacific Railroad that will use the tools available, including line capacity simulators, to assess the impact of alternative approaches to coach floor and platform height on capital and operating cost, capacity and reliability of both systems. This would include the impact on Caltrain if it has to construct 25" or 50" platforms. This study should also include the investment and operating cost impact of the alternative approaches to catenary height and platform clearance and should outline the decisions that the PUC will be asked to make.**

Blended operations also pose the issue of accidents at grade crossings. Even at its existing speeds and frequencies, Caltrain experiences about 20 grade crossing and intruder deaths per year and generates delays on the local streets as autos and trucks wait for passing trains. This will get worse as train frequency and road traffic both increase over time. It would be difficult to overstate the risks of more frequent, faster and quieter Caltrain service combined with 110 mph HSR trains interacting with growing road traffic in the middle of California's increasingly busy cities. **We recommend that the Legislature ask Caltrain, HSR and the communities involved to develop a joint report assessing the likely future risks of increasing train traffic and speeds on the grade crossings in the areas impacted and identifying possible approaches to resolving the issue over time.**

Demand Models. The Authority has continued to develop its demand modeling over the past few Business Plans. The latest model, "Version 2," is based on updated economic data, better transport data and surveys, and a number of revisions in the structure of the model. Version 2 also employed Monte Carlo simulations to produce a clearer view of the range and probability of outcomes. Although comparisons between the demand forecasts of 2012 and 2014 are difficult to make, the overall result has been a lower percentage of business travel and a shorter average trip. Taken together, these changes have meant that, while the number of projected riders has gone up by about 25 percent, the expected revenue has actually decreased by 10 percent.⁷ In addition, the Authority has not yet attempted to include significant non-passenger revenues, such

⁷ "Connecting California," page 45. The percentages shown are based on similar scenarios in the 2012 and 2014 Business Plans, but would change somewhat if other scenarios are used.

as station area rentals and leases. The net result is that the financial forecasts in 2014 are somewhat more conservative than in 2012.

The table below shows the passenger demand and revenue forecasting results:

		HSR Scenarios for Phase I in 2040			
		Low	Medium	High	
	15%	25%	50%	75%	85%
Riders (million)	21.9	25.4	33.1	44.0	49.9
Revenue (million 2013\$)	1,030.6	1,195.0	1,559.4	2,050.1	2,349.8

See Ridership and Revenue Forecasting Technical Memo, pg 7-3

The Authority has defined the low scenario to be the demand and revenue levels for which there is only a 25% probability that the actual demand will fall below the forecast of 25.4 million passengers and a 75% probability that the actual demand will be above forecast. The medium forecast is one where the probability is 50% that the actual demand will be below (or above) 33.1 million riders while the high forecast has a 75% probability that the actual demand will be below the forecast of 44 million riders and a 25% probability that actual demand will exceed forecast levels. We have added the 15% and 85% levels to give an indication of greater caution on the low side and greater optimism on the high side. The critical point is that the program must be assessed not just on the medium forecast but on the range of outcomes in order to get a better picture of demand risk at this point in the program.

The Authority is now discussing plans for an improved modeling effort (“Version 3”) in its 2016 Business Plan. Among other issues, a better modelling effort could: use different fares for business versus recreational travelers; reflect time of day, day of week and seasonal variations (the current model uses averages); and, adjust for the actual trip duration to allow for overnight or longer travel. There are also proposals to adopt an entirely new form of modeling more in accord with model structures that have been developed since the HSRA modeling was initiated. We support these ideas and believe that it will be appropriate to use the improved model for overall planning purposes and for assessing the Authority’s goals in designing alternative management contracts or franchise proposals. An improved demand model will also permit inclusion of factors, such as demand peaking, which will have an effect on fleet size and operating costs. At the same time, there is a concern that the modeling effort will more and more put the Authority into the position of proposing operating strategies and commercial policies that it is less qualified to formulate and that would be better made by the operators. As discussed below, to the extent possible the Authority should begin to bring market and operating expertise, and potential risk capital, into the picture.

Business Model evolution. The HSRA discussion of its proposed business model has developed over time. The current view is that the HSRA will plan and build the system itself through

completion of the IOS.⁸ At that point, the Authority may award a management contract for operation of the system in order to prove the potential demand in the opening five years. In this case, the Authority will need to take the lead role in determining initial service frequency, quality, fare policies, equipment design, safety controls, and all other aspects of the system other than providing management and operating skills and labor. The Authority could alternatively consider a form of gross cost franchising in which the potential operator could be brought into the planning process earlier and assist in establishing the commercial policy for the system.

The Authority is considering a longer-term concessioned operator when demand has been proven. This could include significant investment and pricing flexibility on the part of the operator. In this case, the State will need policies and an agency to regulate the operator. The Authority and its operator will also need to interact with the local operators of the blended systems in order to share scheduling, dispatching and maintenance responsibilities and costs.

We have discussed this issue in most of our letters. We believe that the Authority is making progress in defining its business model options and initial memoranda of understanding (MOU) have been developed for the blended operations. With this acknowledged, we believe that the Authority should be more and more specific about the business model options it is considering because its ability to generate interest from potential private investors and operators will clearly be improved when the private parties have a clearer view of their role. Private investors are not likely to put up significant risk capital until the demand forecasts are proven and the role and authority of the private operator has been clearly established.

As discussed above, the demand projections in the 2016 Business Plan are likely to lead the Authority into issues, such as pricing of business versus recreational travel or peak versus off-peak travel, which should have a significant input from commercial operators. In addition, the Authority has apparently had to leave significant issues undecided such as the sharing of operating costs in the Caltrain area (see “Operations and Maintenance Cost Model Documentation, page 5), which make the estimated O&M costs borne by the Authority higher than they might actually be. **We recommend that these issues be discussed in more detail in the 2014 Business Plan or in later presentations to the Legislature.**

Status of the ability to use the ARRA money that expires on September 30, 2017. The money being provided by the U.S. DOT contains a \$2.5 billion component financed from ARRA funds that will expire unless the money is expended and billed to the U.S. DOT by September 30, 2017. Under the terms of the agreement, the State must match the Federal funding, but the Authority’s ability to do so is currently threatened by litigation over the use of Proposition 1A bond funds.

This poses two issues; the source of the State’s matching funds, and the actual ability to spend money on construction rapidly enough assuming sources of the State’s match can be found. If the pending litigation is resolved in the Authority’s favor, Proposition 1A bonding can provide the State’s match. If the Governor’s proposal to provide cap-and-trade funding to HSRA is enacted, the State match will also be available. We are assured by the Authority that, assuming

⁸ It is possible that Amtrak or another operator will operate re-routed San Joaquin trains from Sacramento to Bakersfield when that section in the Central Valley is completed and before the link to San Fernando is finished.

construction can begin this summer as planned, they expect to be able to expend all of the ARRA money that would otherwise expire.

Service to Anaheim. For a number of reasons, including the high cost of constructing a new, separated high-speed line from Los Angeles to Anaheim, the Authority removed the link to Anaheim from their demand projections and program plans in the 2014 Business Plan, leaving the connection to be provided by Metrolink. While this may be appropriate for the 2014 Business Plan, we believe it should be reconsidered in the 2016 Business Plan since the demand generated by Anaheim and Norwalk in earlier demand modeling was actually greater than Los Angeles Union Station. While we understand that the issue is under discussion with Metrolink, we believe that, as with the blended service between San Jose and San Francisco, the Authority should evaluate conventional speed electrification from Los Angeles Union Station to Norwalk and Anaheim. There appears to be a reasonable possibility that single seat conventional service through to Anaheim would generate enough additional demand and revenue to justify the added investment and operating cost.

2014 Business Plan RECORD DETAIL

Record Date : 4/7/2014

Submission Date : 4/7/2014

Affiliation Type : Individual

Interest As : Individual

Submission Method : Letter

First Name : Mike

Last Name : Brady

Business/Organization :

City :

County :

Zip Code : 00000

Stakeholder Comments/Issues : Please include attached from the LAO as comments on the 2014 Business Plan.

Draft Business Plan Comment

Type :

Attachments : Brady.BP.Comment.pdf (15 mb)



The 2014-15 Budget: Cap-and-Trade Auction Revenue Expenditure Plan

MAC TAYLOR • LEGISLATIVE ANALYST • FEBRUARY 2014

Summary

The Global Warming Solutions Act of 2006 (Chapter 488, Statutes of 2006 [AB 32, Núñez/Pavley]), commonly referred to as AB 32, established the goal of reducing greenhouse gas (GHG) emissions statewide to 1990 levels by 2020. In order to help achieve this goal, the California Air Resources Board (ARB) adopted a regulation to establish a cap-and-trade program that places a “cap” on the aggregate GHG emissions from entities responsible for roughly 85 percent of the state’s GHG emissions. As part of the cap-and-trade program, the ARB conducts quarterly auctions where it sells emission allowances. These auctions are likely to generate billions of dollars in state revenue over the coming years. The Governor’s 2014-15 budget proposes to appropriate \$850 million in auction revenue to various state programs, including programs related to sustainable communities, clean transportation, energy efficiency, natural resources, and waste diversion.

In order to minimize the negative economic impact of cap-and-trade, it is important that auction revenues be invested in a way that maximizes GHG emission reductions for a given level of spending. In reviewing the Governor’s proposed expenditure plan for cap-and-trade auction revenue, we find that there is significant uncertainty regarding the degree to which each investment proposed for funding will achieve GHG reductions. This uncertainty is the result of several factors, including there being only limited data and analysis provided by the administration, as well as the fact that the level of emission reductions achieved would depend on the specific projects funded by departments. Consequently, it is very difficult for the Legislature to have assurance that the specific package of programs proposed by the administration would achieve the greatest reduction per dollar invested possible, or whether a different set of programs might yield better outcomes in a more cost-effective manner.

Given these concerns, we recommend that the Legislature direct ARB to develop metrics for departments to use in order to prospectively evaluate the potential GHG emission benefits of proposed projects, as well as direct the board to establish a set of guidelines for how departments should incorporate these metrics into their decision-making processes. Having such metrics to use as part of departments’ decision-making processes when determining how program funding will be spent would provide greater certainty regarding the potential GHG emission reductions of projects being considered for funding.

BACKGROUND

Assembly Bill 32 established the goal of reducing GHG emissions statewide to 1990 levels by 2020. Among other provisions, the legislation directed ARB to develop a plan encompassing a set of regulations and programs that, taken together, would be a means for the state to achieve its 2020 GHG reduction target in a cost-effective manner. This plan is commonly referred to as the AB 32 Scoping Plan. The original scoping plan was adopted by ARB in December 2008 and identified various regulations and programs such as the state's Renewables Portfolio Standard, Low Carbon Fuel Standard, and energy efficiency programs. (At the time of this analysis, ARB is considering an update to the scoping plan.) In order to fund administrative activities associated with implementing the plan, AB 32 authorized ARB to assess a fee on the state's largest GHG emitters. This fee, which is commonly referred to as the AB 32 Cost of Implementation (COI) fee, provides roughly \$40 million annually to various state departments that have roles in developing, implementing, and evaluating the regulations and programs included in the scoping plan.

Assembly Bill 32 also authorized (but did not require) ARB to include, as part of the scoping plan, a market-based mechanism to reduce the state's GHG emissions. The legislation defined a market-based mechanism as a system that includes an annually declining limit on GHG emissions, as well as a trading component whereby sources of GHG emissions may buy and sell carbon allowances in order to comply with the regulation. Such a system is commonly referred to as a cap-and-trade program.

How Cap-and-Trade Works to Reduce Emissions

The Concept of the Cap. A cap-and-trade program sets a limit or cap on aggregate emissions. Typically, the cap declines over time, ultimately arriving at the target emission level. In order to operationalize the cap, the regulator administering the program creates allowances equal to the numeric value of the cap. For example, if the cap were 100 million tons of carbon dioxide emissions, the regulator would create 100 million allowances, each equal to one ton of emissions. The regulator then requires specified emitters to obtain allowances equal to their total emissions in a given period of time. Because the cap declines and allowances become more scarce over time, allowance prices (which we discuss below) would be expected to increase. As allowances become more expensive, regulated parties have a greater incentive to find ways to reduce their emissions in order to avoid having to purchase as many of the relatively more expensive allowances. Consequently, to the extent that it is less expensive for a regulated entity to reduce its emissions—for example, by installing a more efficient technology—than it is to purchase allowances, the entity will reduce its emissions. As such, it is the supply and demand for allowances, affected by the scarcity of allowances created by the declining cap, that forces the achievement of the environmental goal of reducing emissions to a targeted level.

Distribution of Allowances. Three ways regulators can distribute allowances are to (1) distribute all available allowances for free, (2) distribute all allowances via an auction, or (3) have some portion allocated for free while the other portion is auctioned. The way in which allowances are distributed affects the overall cost of compliance for regulated parties (which,

in turn, affects consumers, businesses, and the economy at large). The way in which allowances are distributed, however, does not impact the program's environmental goal. This is because, as addressed above, it is the declining cap, not the manner in which allowances are distributed, that achieves the environmental goal of the program. Once allowances have been distributed, entities can then "trade" (buy and sell on the open market) the allowances in order to obtain enough to cover their total emissions for a given period of time.

California's Cap-and-Trade Program

In conjunction with the AB 32 Scoping Plan, ARB adopted a cap-and-trade regulation that places a cap on aggregate GHG emissions from entities responsible for roughly 85 percent of California's total GHG emissions. While these entities are not assigned an individual reduction target, entities that emit at least 25,000 metric tons or more of carbon dioxide equivalent (CO₂e) per year are subject to the cap-and-trade regulation and are therefore considered to be "covered entities." When the program is fully operational, approximately 600 of the state's largest emitters of GHGs will be subject to the regulation, including oil producers, refiners, and electricity generators. In order to comply with the regulation, a covered entity must obtain one allowance (or equivalent thereof) for every metric ton of CO₂e that it emits during a given compliance period.

Under ARB's cap-and-trade program, covered entities have an opportunity to obtain allowances in multiple ways. The ARB has designed its cap-and-trade program to provide a portion of allowances for free, while another portion are available for purchase at quarterly auctions. Covered entities also have the opportunity to trade allowances in the open market. Over time, the cap on aggregate annual emissions will gradually

decline from 409 million metric tons of CO₂e in 2012 to 341 million metric tons of CO₂e in 2020. As the cap declines, the number of allowances ARB makes available will decline proportionately. Thus, a covered entity will need to determine if it is more cost-effective to purchase allowances or to reduce its emissions (such as by making energy efficiency upgrades in its facility).

Cap-and-Trade Auction Revenue

Revenue Collected to Date. Between November 2012 and November 2013, ARB conducted five auctions that have generated a total of \$532 million in state revenue. The *2013-14 Budget Act* included provisions to loan \$500 million of this amount to the General Fund. (The Governor's budget proposes to repay \$100 million of that amount in 2014-15.) In addition, the 2013-14 budget provided \$578,000 to the Office of Environmental Health and Hazard Assessment (OEHHA) for the development of a method for identifying disadvantaged communities, which we discuss in more detail below.

Future Auction Revenues. The amount of revenue that future allowance auctions will generate will depend on the price of allowances and the number of allowances purchased versus allocated for free. The price of allowances could range greatly depending on demand for allowances relative to the cost of directly reducing GHG emissions, the state of the economy, and other factors. The ARB has adopted regulations to keep auction prices within a certain range by setting a minimum and maximum price for allowances sold at auctions—from \$10 per ton of emissions to \$40 per ton of emissions. Under ARB's current auction schedule, over the life of the program, roughly half of all allowances will be allocated at auctions, with the remainder allocated for free. We note, however, that ARB is currently considering a change to increase the amount of allowances allocated for free to 60 percent.

California's cap-and-trade program is expected to raise billions of dollars in auction revenues from 2012 through 2020. The actual amount of revenue that will be raised is difficult to predict, particularly because of the uncertainty about future allowance prices. Using ARB's floor and ceiling prices for allowances, and assuming that ARB provides 60 percent of all allowance for free, the total cap-and-trade revenues from all auctions through 2020 could range from \$12 billion to \$45 billion. Several economists who have evaluated California's cap-and-trade program have estimated that, over the life of the program, average allowance price may be in the \$15 to \$20 range. If this were to occur, total revenue for the program through 2020 could be roughly \$15 billion. To the extent that ARB does not increase the percentage of free allowances, the above revenue estimates would be higher.

Prior Legislative Direction for Use of Revenue.

Three statutes enacted in 2012 provide some requirements and direction on the use of cap-and-trade auction revenue.

- ***Chapter 39, Statutes of 2012 (SB 1018, Committee on Budget and Fiscal Review).*** Chapter 39 created the Greenhouse Gas Reduction Fund (GGRF), into which all auction revenue is to be deposited. The legislation requires that before departments can spend monies from the GGRF, they must prepare a record specifying: (1) how the expenditures will be used, (2) how the expenditures will further the purposes of AB 32, (3) how the expenditures will achieve GHG emission reductions, (4) how the department considered other non-GHG-related objectives, and (5) how the department will document the results of the expenditures.
- ***Chapter 807, Statutes of 2012 (AB 1532, Perez).*** Chapter 807 directed the Department of Finance to develop and periodically update a three-year investment plan that identifies feasible and cost-effective GHG emission reduction investments. Chapter 807 also requires that cap-and-trade auction revenues be used to reduce GHG emissions and, to the extent feasible, achieve co-benefits such as job creation, air quality improvements, and public health benefits.
- ***Chapter 830, Statutes of 2012 (SB 535, de León).*** Chapter 830 requires that 25 percent of auction revenue be used to benefit disadvantaged communities. Chapter 830 also requires that 10 percent of auction revenue be invested in disadvantaged communities.

Potential Litigation Over Use of Auction

Revenues. Given the scope of cap-and-trade and the amount of revenue that the auctions are likely to generate, it is reasonable to expect litigation over the coming years regarding how these revenues can be used. In 2012, the California Chamber of Commerce filed a lawsuit against the ARB claiming that cap-and-trade auction revenues constitute illegal tax revenue. In November 2013, the superior court ruled that the "charges" from the auction have characteristics of a tax as well as a fee, but that, on balance, the charges constitute legal regulatory fees. This ruling is subject to appeal. It is also possible that even if ultimately determined to be a fee, the courts would put limits on how the revenues can be used, just as all other state fees have spending constraints. Final decisions from the appellate courts on these issues would likely take years.

GOVERNOR'S PROPOSALS

The Governor's budget includes the first expenditure plan for cap-and-trade revenues (aside from the small amount provided in 2013-14 for OEHHA to identify disadvantage communities). As shown in Figure 1 (see next page), the plan proposes to spend \$850 million in 2014-15, all from the GGRF, on various programs. (The administration proposes \$31 million in 2013-14 for these activities.) The administration's expenditure plan provides the same level of funding for most programs in 2015-16 as it proposes for 2014-15. However, the administration is proposing that beginning in 2015-16, 33 percent of all GGRF revenues be continuously appropriated to the High-Speed Rail Authority (HSRA) for the state's high-speed rail project. These funds would support the construction of the project's Initial Operating Segment (IOS), which is estimated to cost \$31 billion and be completed by 2022. At this time, the administration has not provided an estimate of projected cap-and-trade auction revenues; thus, it is unclear how much funding would go to high-speed rail in 2015-16 and beyond.

The proposed expenditure plan provides funding to 11 different departments and boards to administer 23 distinct program components, such as energy efficiency projects, low-emission vehicle rebates, and the state's high-speed rail system. The administration states that it took into consideration several factors when developing its cap-and-trade expenditure plan, including consistency with ARB's investment plan for GHG reductions, the Governor's overarching energy and transportation policy priorities, the ability to meet Chapter 830's requirements regarding disadvantaged communities, and other potential co-benefits (such as the public health benefits of reducing air pollution). The Governor's budget also includes a partial repayment of \$100 million of the 2013-14

budget loan to the General Fund. In regards to the remaining loan balance, the Governor is proposing budget trailer legislation specifying that when the remaining \$400 million is repaid, the funds will be directed to HSRA. Below, we provide a description of each proposal.

Sustainable Communities and Clean Transportation

High-Speed Rail—HSRA. The Governor's budget requests \$250 million in 2014-15 to support construction of the high-speed rail system. Specifically, this includes (1) \$58.6 million for environmental planning and permitting for the first phase of the project (which would extend from San Francisco to Anaheim) and (2) \$191.4 million to purchase land and partially support construction for the Initial Construction Segment (which would extend 130 miles from Madera to Bakersfield). According to the administration, the availability of a high-speed rail system in California will reduce vehicle miles traveled in cars, as well as planes, thereby reducing total GHG emissions. As described above, the administration also proposes budget trailer legislation to continuously appropriate 33 percent of GGRF revenues to HSRA beginning in 2015-16.

Low Carbon Transportation—ARB. The Governor's budget requests \$30 million in 2013-14, \$200 million in 2014-15, and \$200 million in 2015-16 to support the expansion of ARB's existing clean transportation program. This program funds a range of programmatic activities such as incentive programs for zero and low-emission passenger vehicles, clean buses and trucks, and sustainable freight technology. Of the additional funding proposed for the program, ARB will receive \$2 million annually for 15 new positions to administer additional grants and monitor

Figure 1

Governor's 2014-15 Cap-and-Trade Expenditure Plan*(In Millions)*

Department	Activity	Amount
Sustainable Communities and Clean Transportation		
High-Speed Rail Authority	Rail planning, land acquisition, and construction	\$250.0
Air Resources Board	Low-emission vehicle rebates	200.0
Strategic Growth Council	Transit oriented development grants	100.0
Caltrans	Intercity rail grants	50.0
Energy Efficiency and Clean Energy		
Community Services and Development	Low-Income Weatherization Program	\$80.0
General Services	Energy efficiency upgrades in state buildings:	
	Zero Net Energy Buildings	\$10.5
	Energy Retrofit Loan Program	8.5
	Distributed renewable generation at state buildings	1.0
	Subtotal	(\$20.0)
Food and Agriculture	Reducing agricultural waste:	
	Grant funding for dairy digesters	\$12.0
	Agricultural greenhouse gas research	5.0
	Biofuel standards	3.0
	Subtotal	(\$20.0)
Water Resources	Water Action Plan—water use efficiency:	
	Water efficiency grants	\$10.0
	State Water Project upgrades	10.0
	Subtotal	(\$20.0)
Natural Resources and Waste Diversion		
Forestry and Fire Protection	Fire prevention and urban forestry:	
	Grants for urban and community forestry	\$18.0
	Vegetation management program	12.7
	Forest legacy program	8.4
	Reforestation services	5.1
	Research at demonstration state forests	2.6
	Forest pest control programs	1.7
	Regulation of timber harvests	1.4
	Subtotal	(\$50.0)
Fish and Wildlife	Water Action Plan—wetlands restoration	\$30.0
CalRecycle	Waste diversion:	
	Grant programs to encourage diversion of waste from landfills	\$20.0
	Loan program for recycling and composting facilities	10.0
	Subtotal	(\$30.0)
	Total	\$850.0

CalRecycle = California Department of Resources Recycling and Recovery.

funded projects. In addition, the Governor's budget proposes \$2.6 million and ten new positions to support ARB's administration of the cap-and-trade expenditure plan. Specifically, ARB staff would develop metrics for other departments to use to evaluate the effectiveness of their programs at reducing GHG emissions.

Sustainable Communities—Strategic Growth Council (SGC). The SGC is comprised of eight members representing six state agencies, the Governor's Office of Planning and Research (OPR), and a public member appointed by the Governor. The SGC is responsible for coordinating a variety of state programs and activities related to sustainable communities and the environment, such as the implementation of Chapter 728, Statutes of 2007 (SB 375, Steinberg), commonly referred to as SB 375, which incorporates sustainable community development into transportation planning. The Governor's budget requests \$100 million in 2014-15 and \$100 million in 2015-16 to establish a SB 375-related grant program within OPR to be administered by SGC. While details of the program have not been developed at the time of this analysis, OPR indicates that grants could be available for local government sponsored projects that implement a regional "sustainable communities strategy" plan as required by SB 375. Specifically, funding could support transit capital and operating costs, bicycle facilities, development near transit stations, and other projects intended to reduce vehicle miles traveled. According to the administration, priority would be given for activities serving disadvantaged communities. Under the Governor's budget, \$800,000 of the proposed \$100 million from the GGFRF would be used to support the continued operations of the SGC and relocate it from under the Natural Resources Agency to OPR.

Rail Modernization—California Department of Transportation (Caltrans). The Governor's

budget proposes \$50 million in 2014-15 and 2015-16 for Caltrans to implement a new rail modernization grant program. According to the administration, grant funds would support projects intended to enhance mass transit operations in the state, with the intent of increasing transit ridership and reducing vehicle miles traveled in cars. For example, grants could be given to projects to integrate the payment and fare systems of high-speed rail, intercity rail, commuter rail, and transit systems. Grants could also be provided for marketing efforts intended to increase ridership.

Energy Efficiency and Clean Energy

Low-Income Weatherization—Department of Community Services and Development (CSD). The Governor's budget requests \$80 million in 2014-15 and \$80 million in 2015-16 for CSD to continue funding its existing weatherization and solar programs. In recent years this program has been largely funded by one-time federal monies. The CSD's federal Weatherization Assistance Program provides low-income Californians with weatherization services such as weather stripping, insulation, and water heater replacement. In addition to weatherization services, in recent years CSD has used federal funds to operate programs that install solar photovoltaic systems on low-income homes. Of the annual amount of cap-and-trade auction revenue proposed for CSD, \$4.6 million would support 10.5 new temporary positions, 14 existing positions that had previously been funded by federal funds, and consulting services to administer the program and evaluate program effectiveness.

Green State Buildings—Department of General Services (DGS). The Governor's budget requests \$20 million in both 2014-15 and 2015-16 for DGS to support energy efficiency and renewable energy programs. First, \$10.5 million would help convert 12 state-owned facilities to be "zero

net energy” by implementing a combination of energy efficiency measures and renewable power generation so that the buildings do not use any more energy than they generate over the course of a year. Second, \$8.5 million would support the expansion of the existing Statewide Energy Retrofit Loan Program, which loans funding to departments for energy efficiency projects. Third, \$1 million would be used to install renewable energy generation at state buildings. Of the total requested, the Governor’s budget proposes \$1.3 million each year to support nine new positions for program administration.

Agricultural Energy—California Department of Food and Agriculture (CDFA). The Governor’s budget requests \$20 million in both 2014-15 and 2015-16 for CDFA to support three new programs related to agriculture energy.

- \$12 million in grants to fund “digesters” that capture methane from animal waste in order to generate electricity or create transportation fuel.
- \$5 million for research related to GHG emissions from fertilizer application and agriculture management practices that reduce those emissions.
- \$3 million to develop technical standards that would allow low-carbon agricultural biofuels to be sold in California.

Under the Governor’s proposal, some of the requested funding—\$1.4 million in 2014-15 and \$1.5 million in 2015-16—would support 15 existing positions that are currently funded from various funds such as motor oil fees.

Water Use Efficiency—Department of Water Resources (DWR). The Governor’s budget proposes \$20 million in both 2014-15 and 2015-16 for DWR to support water-energy efficiency activities. For each year, the proposed funding would be split

equally for (1) grants to local agencies to fund water conservation measures intended to reduce the amount of energy used to move, treat, and heat water; and (2) upgrading two generating units on the State Water Project (SWP) to become more energy efficient. In addition, \$1 million of the proposed annual funding would support 3.5 existing positions (previously funded by bond funds) to administer the above grants.

Natural Resources and Waste Diversion

Fire Prevention and Urban Forestry—California Department of Forestry and Fire Protection (CalFire). The Governor’s budget requests \$50 million for each of the next two years to expand seven existing programs at CalFire. Specifically, the proposed funding would support (1) local assistance grants for urban and community forestry; (2) CalFire’s vegetation management program, which is a cost-sharing program with landowners designed to reduce the risk of wildland fire; (3) the forest legacy program, which invests in forestlands to prevent conversion to non-forest use; (4) reforestation services; (5) research at demonstration state forests and cooperative wildlands; (6) forest pest control programs; and (7) the forest practice program, which regulates timber harvests. According to the administration, each of these programs would reduce GHG emissions by increasing the number and health of forests, as well as reducing the frequency and severity of wildland fires. Of the total amount proposed, CalFire would receive \$2.5 million in 2014-15 to support 13 new positions (growing to \$2.6 million and 14 positions in 2015-16) for program implementation.

Wetland and Watershed Restoration—Department of Fish and Wildlife (DFW). The Governor’s budget requests \$30 million in 2014-15 and 2015-16 to support DFW’s wetland restoration efforts. The proposed funding would support

grants for ecosystem restoration throughout the state—including in the Delta, on the coast, and in mountain meadows—which would increase the amount of land that can naturally capture and store carbon. The proposed funding would also support measures to reduce the energy needed to transport water to wetlands currently managed by DFW. Of the total amount requested, the Governor proposes \$2.2 million in 2014-15 to support 17 new positions (increasing to \$3 million and 27 positions in 2015-16) for program implementation.

Waste Diversion—California Department of Resources Recycling and Recovery (CalRecycle). The Governor’s budget requests \$30 million for each of the next two years for CalRecycle to support projects designed to increase recycling and composting. Specifically, the administration

proposes \$20 million for grants to expand existing facilities or develop new facilities that process organic or recyclable materials, and \$10 million to establish a new revolving loan fund to provide low-interest loans to encourage the establishment or expansion of recycling businesses. These two programs are intended to reduce GHG emissions by (1) redirecting organic waste from landfills to anaerobic digestion facilities, which would reduce methane emissions at landfills; and (2) increasing recycling, which could produce fewer GHG emissions than the manufacturing of new products. Of the amount proposed, the budget provides CalRecycle with \$392,000 in 2014-15 to support four new positions (\$477,000 and five positions in 2015-16) for program implementation.

FINDINGS AND LEGISLATIVE CONSIDERATIONS

In reviewing the Governor’s proposed expenditure plan for cap-and-trade auction revenue, we find that there is significant uncertainty regarding the degree to which each investment proposed for funding would achieve GHG reductions. This uncertainty is the result of several factors, including there being only limited data provided by the administration. While we acknowledge that estimating emission reductions is challenging, the uncertainty that is created increases the risk that the administration’s plan would not maximize GHG reductions with the level of funding available. Consequently, it is very difficult for the Legislature to have assurance that the specific package of programs proposed by the administration would achieve the greatest reduction per dollar invested possible, or whether a different set of programs might yield better outcomes in a more cost-effective manner. In this section, we also note that some GHG reductions

may not occur until after 2020, the statutory goal for reaching 1990 levels. In addition, we find that the Governor’s plan raises some implementation and coordination issues.

Various Uncertainties Make It Unlikely Proposal Will Maximize GHG Reductions

In order to minimize the negative economic impact of cap-and-trade, it is important that auction revenues be invested in a way that maximizes GHG emission reductions for a given level of spending. Maximizing emission reductions reduces the demand for allowances, thereby putting downward pressure on the price of allowances. This, in turn, reduces the overall cost for covered entities to comply with AB 32, which reduces the potential costs that would be borne by consumers, businesses, energy ratepayers, and the economy at large. While the administration has provided some information to suggest that proposed activities

may reduce GHG emissions at some level, there is significant uncertainty regarding how much emissions would be reduced by the administration's proposed investments, thereby making it unlikely that the total package of activities proposed by the Governor would maximize GHG emission reductions.

Proposed Activities Could Contribute to GHG Reductions. . . . Departments have provided our office with some research and other information suggesting that certain types of activities proposed in the plan have the potential to reduce GHG emissions. For example, according to CDFA, the proposal to fund dairy digesters would reduce GHG emissions by 15,000 to 21,600 metric tons per year by capturing the methane emissions from animal waste. In addition, wetland restoration could sequester GHG emissions. According to DFW, estimates of the carbon storage potential from restored wetlands and meadows range widely, but can be as much as 25 metric tons of CO₂e per acre restored per year. The amount of carbon stored depends on numerous factors, including: (1) the type of wetland, (2) whether the land is adequately maintained, (3) the type of vegetation in the ecosystem, (4) the rate at which the soil accumulates, and (5) whether the restoration increases methane emissions.

. . . But Administration Has Not Estimated Likely Reduction Amounts. While some information provided to our office indicates that certain types of proposed activities may reduce GHG emissions at some level, the administration did not conduct any analysis to identify which activities would provide the greatest level of GHG emission reductions. In fact, for some programs, the administration has been unable to provide any data or research to substantiate how much the proposed activity would reduce GHG emissions. For example, at the time of this analysis, both Caltrans and CalFire were unable to provide data

quantifying the potential emission reductions of their proposed activities. In addition, some of the information provided by departments may not be applicable to California. The lack of data makes it difficult for the Legislature to determine how much of a reduction these activities are likely to achieve for the amount proposed to be spent.

Moreover, the type of analysis that would have been most helpful would have included an evaluation of the relative marginal costs and benefits of the different investments. Without this type of analysis, the state has little information with which to make investment decisions. Lack of analytical information leads to increased risk that the activities the state chooses to fund will not achieve the greatest return on investment. While we acknowledge that good data is not always available and this type of rigorous analysis is difficult, we nonetheless find that an effort to estimate potential outcomes would provide important information to allow the Legislature to make informed decisions on how to achieve the greatest return on investment with these hundreds of millions of dollars in new state funds.

Some Activity May Have Happened on the Natural. The lack of an analysis evaluating the degree to which the proposals would result in GHG emission reductions is further complicated because it is unclear to what extent some proposed programs are subsidizing activities that would have happened on the natural (meaning without the support of cap-and-trade auction revenues). This is important because to the extent that GHG reductions would have happened even in the absence of additional funding, the state's efforts do not actually yield additional *net* emission reductions. For example, it is unclear to what extent the incentives provided by ARB's low-emission vehicle program can be credited with consumers' decision to purchase one of these vehicles. This is because some consumers would have purchased

more fuel-efficient vehicles on their own to save on fuel costs, even without a rebate. Likewise, SGC's sustainable communities grant program would provide grant funding for projects such as bike lanes or sidewalks near transit stations that developers might have built anyway to meet local demand, even without the additional funding.

Reduction Levels Would Depend on Specific Projects Selected. The fact that many of the proposals included in the Governor's expenditure plan are grant programs also adds to the uncertain outcomes of the plan. While some of the activities that would ultimately be funded by these programs might be effective at reducing GHG emissions, the level of benefits achieved would depend on the specific projects selected. For example, DFW proposes to restore ecosystems throughout the state to increase the capacity of these lands to store carbon. While ecosystem restoration can reduce GHG emission levels, the total level of reductions from restoration would depend on several factors, including the type of ecosystems restored and the number of acres restored. Similarly, the actual GHG emission reduction benefits that could result from the proposed energy efficiency programs at DGS would also depend on the specific projects selected. The benefits could vary from project to project depending on factors such as the current condition and type of facility, its location, and its current energy consumption levels.

The administration's expenditure plan also includes proposals for several research-related programs, including research for state demonstration forests and evaluations of GHG emissions associated with fertilizer application. This research may have merit and some impact on GHG emissions in the future. However, it is impossible to predict the outcomes or discoveries that will result from the proposed research activities, and those outcomes might depend on exactly how the research is directed. This makes it

unclear what the actual GHG emission reductions would be. It is possible that state funded research could contribute to meaningful technological advancements leading to significant GHG emission reductions in the future, but it is also possible that the research would not yield such benefits.

Some Outcomes Would Depend on Changes in Behavior. In addition, the amount of GHG reductions for some proposed programs would depend on changes in behavior that are difficult to predict. For example, the administration assumes that the high-speed rail, SGC, and Caltrans proposals would result in some individuals shifting their mode of transportation, resulting in a net reduction in vehicle miles traveled in cars. While such changes might very well occur and could result in net GHG emission reductions, it would be difficult to predict with precision the likely marginal net GHG reduction due to these efforts. This uncertainty increases the risk that the administration's plan would not achieve its maximum potential emission reductions.

Some Reductions Would Likely Occur Beyond 2020

We also find that some proposed activities would not contribute significant GHG reductions before 2020, which as mentioned above, is the statutory target for reaching 1990 emissions levels. For example, plans for the high-speed rail system indicate that the first phase of the project will not be operational until 2022. Moreover, the construction of the project would actually generate GHG emissions of 30,000 metric tons over the next several years. The HSRA plans to offset these emissions with an urban forestry program that proposes to plant thousands of trees in the Central Valley. We also note that HSRA's GHG emission estimates for construction do not include emissions associated with the production of construction materials, which suggests that the amount of

emissions requiring mitigation could be much higher than currently planned. Therefore, it is possible that the construction of the IOS may result in a net increase in GHG emissions, even when accounting for proposed offsets.

Similarly, the proposed research projects, forestry, and ecosystem restoration activities might not achieve much of their GHG emission reductions until after 2020. For example, research that results in technological breakthroughs and successful findings might take years to implement; and trees and ecosystems take time to grow and recover.

Plan Raises Several Implementation Issues

Plan Lacks Coordinated Approach to Metrics and Oversight. Under the Governor's proposed approach, each department will be responsible for developing its own set of criteria to determine how to spend its GGRF allocation. This raises several concerns. First, departments will not necessarily have a means to evaluate the potential GHG emission reductions of proposed projects. While ARB intends to provide metrics to departments to evaluate program outcomes, they do not intend to provide metrics to departments to assist in their investment decision-making process. Furthermore, the administration will not provide a means for departments to evaluate potential co-benefits, such as public health impacts. Consequently, it is unclear whether these departments—most of which have no experience evaluating GHG emission reduction programs—will be able to knowledgeably identify the specific activities most likely to reduce GHG emissions.

Second, our understanding is that the administration does not intend to provide departments with specific guidance on how to weigh GHG emission reductions compared to co-benefits or other considerations when evaluating how they will spend their appropriations. It is

therefore unclear, for example, what criteria departments administering grant programs will use to evaluate grant proposals, and whether the level of GHG emission reductions will be given top priority in the scoring of those proposals. Third, the administration has not established GHG reduction goals for the various programs proposed for funding. So, while many programs might ultimately demonstrate that they reduced GHG emissions, it will not be clear whether they achieved more or less than what had been expected at the time the Legislature approved funding for the program.

Coordination Issues Could Affect Certain Programs. In our report *Energy Efficiency and Alternative Energy Programs* (December 2012), we found that the state lacks a comprehensive framework that fully coordinates the state's energy programs. Based on our conversations with CSD and the California Public Utilities Commission (CPUC), it seems that they are making greater efforts to coordinate their programs. As the state makes additional funding available for these types of purposes, it will be important to continue such coordination efforts. For example, under the proposed expenditure plan, CSD would receive \$80 million in additional funding for its low-income weatherization program, which is a statewide program serving low-income utility customers in investor-owned utility (IOU) territory as well as non-IOU territory. We also note, however, that CPUC has directed IOUs to establish similar programs with the goal of funding 100 percent of all cost-effective, energy efficiency projects in low-income communities in each IOUs respective territory by 2020. Based on information from both CSD and CPUC, the two departments are working to coordinate their existing programs to reduce the potential for duplication. Since the Governor's budget would provide additional funding to low-income energy efficiency programs, it would

be important for CPUC to consider if adjustments should be made to IOU programs in order to ensure the cost-effectiveness of both programs. The Governor's expenditure plan also includes a proposal from DGS that would increase the amount of renewable energy at state buildings. This would require that DGS coordinate with the state's energy agencies (such as CPUC) to ensure that the additional electricity generation is accounted for in the state's energy procurement process.

GGRF May Not Be Appropriate Fund Source for SWP. The SWP is a large water storage and delivery system that provides water to homes and farmland throughout the state. Currently, the vast majority of SWP expenditures are funded by payments from the water agencies ("water contractors") that receive water from the project, as they are the direct beneficiaries of the project. The generating unit upgrades proposed by DWR would benefit water contractors by (1) reducing the amount of electricity purchased in order to operate the SWP, (2) reducing the cost SWP would have to pay to purchase allowances to comply with AB 32, and (3) reducing the water used to generate energy, making the water available for delivery to water contractors when needed. Thus, revenues from those contractors may be a more appropriate source for funding these upgrades rather than GGRF. Accordingly, we would recommend that the Legislature reject the proposed use of \$10 million in cap-and-trade auction revenues for this purpose. We note that denying this request does not prevent DWR from performing the upgrades using contractor funds if the department considers the upgrades necessary.

Other Options Available for Legislative Consideration

In addition to considering proposals included in the Governor's budget, the Legislature might want to consider additional options for investing

cap-and-trade revenue. For example, we describe below potential options such as increasing investments in emerging technologies, alternative fuels and transportation, as well as expanding eligibility for the existing program to implement Proposition 39. Many of these options could align with the Legislature's long-term energy goals such as reducing the state's dependency on traditional fuels, increasing the integration of renewables into the electricity grid, and providing funding for public entities to make energy efficiency upgrades. The likely return on investment of these options is unknown. As with other proposals, the Legislature would want to evaluate the potential costs and GHG reductions prior to allocating funds for any of these options.

AB 32 COI Fee. The ARB's 2008 Scoping Plan considers several uses of cap-and-trade revenue, including the potential use of auction revenue to support the costs of administering AB 32. As we described above, such administrative costs are currently paid by the AB 32 COI fee. One option the Legislature could consider is using cap-and-trade revenue to support these costs, thus eliminating the need for the COI fee. This would reduce covered entities' overall cost of compliance with AB 32.

Emerging Technologies. Another option the Legislature could consider is investing in emerging technologies. For example, the Legislature has expressed its interest in the development of energy storage technology and the integration of energy storage into the electricity grid by directing the CPUC to explore options for expanding the use of energy storage by the state's IOUs. However, widespread use of energy storage technology has been limited due to high implementation costs. Carbon capture and sequestration (CCS) is another emerging technological process that is designed to capture carbon dioxide emissions from large industrial sources that burn fossil fuel

or biomass. The technology does this by injecting those emissions into a geological formation that prevents the carbon from being released into the atmosphere. For example, Hydrogen Energy California in Kern County is a pilot project that injects captured emissions into the ground to increase oil production. The ARB's cap-and-trade regulation includes provisions for covered entities to potentially use CCS technology in order to reduce their GHG emissions, thus reducing the compliance obligation. Like energy storage technology, CCS generally is considered cost-prohibitive. Additional funding for these or other emerging technologies, however, could encourage their development, much like the administration has proposed for anaerobic digesters (CalRecycle) and biomass facilities (CDFA). As mentioned above, the Legislature would want to evaluate the potential costs and benefits of investing in these technologies prior to providing funding.

Alternative and Renewable Fuel and Vehicle Technology (ARFVT) Program. The California Energy Commission (CEC) currently administers the ARFVT—a program geared toward the development and improvement of alternative fuels and alternative fuel technology. Funded primarily by vehicle license and smog abatement fees, the program has an annual budget of roughly

\$100 million and provides grants and loans to public agencies, private businesses, public-private partnerships, and vehicle and technology consortia. In order to encourage further development of these fuels and technologies, the Legislature could consider providing additional funding for these types of investments.

Proposition 39 Program. Passed by the voters in November 2012, Proposition 39 changes corporate income apportionment resulting in increased tax revenues. The measure also requires that for the first five years of implementation a portion of these revenues be used to improve energy efficiency and expand the use of alternative energy in public buildings. The *2013-14 Budget Act* appropriates a total of \$467 million to support a new grant program, a new revolving loan program, and energy-related workforce training for schools and community colleges. The budget also required the CEC to develop guidelines for schools and community colleges to evaluate projects' potential energy benefits. The language of Proposition 39 anticipated additional eligible candidates for this funding—including public hospitals, prisons, and other state buildings. The Legislature could use some cap-and-trade auction revenue to expand Proposition 39 to other public projects besides those at schools and community colleges.

LAO RECOMMENDATIONS

As previously discussed, the amount of revenues that the state will receive from cap-and-trade auctions will be significant, particularly in the long run. Compared to a different mix of investments that could be made with the cap-and-trade auction revenue, the Governor's proposal is unlikely to maximize GHG emission reductions. Therefore, the Legislature will want to consider the most effective use of this revenue. Below, we outline

recommendations that would help improve the likelihood that the state achieves quantifiable GHG emission reductions with this new funding.

Consider Full Array of Options to Meet Legislative Priorities

The Legislature has many options when considering how to use cap-and-trade auction revenue. In appropriating the funding, we

recommend that the Legislature consider a full array of options to help achieve the goals of AB 32 and meet legislative priorities. For example, the Legislature may decide that, while it approves of the Governor's general overall approach to appropriating auction revenue, it may want to increase or decrease funding for specific programs in order to more closely align with legislative priorities or to increase the likelihood that the total package of proposals will maximize GHG emission reductions. In addition to the Governor's budget proposals, the Legislature may wish to consider options like those we discussed above, as well as additional options that would reduce GHG emissions.

In considering its funding options, the Legislature will also want to consider potential legal risks. The use of fee revenue is generally guided by constitutional constraints. While the recent ruling from the superior court found that auction charges constitute legal regulatory fees, it is subject to appeal and does not create a legal precedent. It is possible that there will be additional court decisions in the future that affect how cap-and-trade auction revenues legally can be used. Given these legal uncertainties, funding certain activities with these revenues might be riskier than other activities. Therefore, the Legislature may want to consult with Legislative Counsel when considering its options for spending auction revenues.

Approve ARB Positions but Expand Scope

We find that ARB's proposal to create metrics for the departments to use in order to evaluate the effectiveness of their GGRF-funded projects has merit. As such, we recommend that the Legislature approve the ARB's request for \$2.6 million and ten positions to develop these metrics.

In addition, we recommend the Legislature direct the board to use this staff to develop metrics for departments to use in order to prospectively evaluate the potential GHG emission benefits of proposed projects as well as direct ARB to establish a set of guidelines that includes direction for departments regarding how they should incorporate these metrics into their decision-making processes. Having such metrics to use as part of departments' decision-making process when determining how program funding is spent would provide greater certainty regarding GHG emission reductions for potential projects. While this requirement might delay getting funding "out the door" by a short while, we find that such a short delay would be worthwhile if this were to increase the likelihood that the state could better ensure that the most beneficial projects are being funded.

In order to ensure that all departments use a consistent set of criteria to develop and implement their programs, the ARB should develop guidelines on how criteria such as potential GHG impacts and co-benefits for grant applications are to be weighted. These guidelines should include how the metric is to be used as part of departments' decision-making process. Guidelines should also include parameters and direction for departments' grant making programs. These parameters should align with the primary goal of maximizing GHG emission reductions in a cost-effective way. We further recommend that the Legislature direct the administration to establish GHG reduction goals for each program funded by auction revenues. This would allow departments and the Legislature to evaluate the effectiveness of these programs relative to what was expected at the time of legislative approval.

2014-15 BUDGET

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LAO Publications

This report was reviewed by Brian Brown. The Legislative Analyst's Office (LAO) is a nonpartisan office which provides fiscal and policy information and advice to the Legislature.

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2014 Business Plan RECORD DETAIL

Record Date : 4/8/2014
Submission Date : 4/8/2014
Affiliation Type : Individual
Interest As : Businesses And Organizations
Submission Method : Project Email
First Name : Kevin
Last Name : Dayton
Business/Organization :
City :
County :
Zip Code : 00000
Stakeholder Comments/Issues : Typos and Errors to Correct:

Page 65 - SB 1029 was signed in July 2012, not July 2013 (see
http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201120120SB1029
<http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201120120SB1029&search_keywords=&search_keywords=)

Page 41 - Authoritys Consultants - add an apostrophe for singular possessive

Page 37 - remove apostrophe in 2050's

Page 24 - California Transportation Commission's (CTC) approved the
release
- get rid of singular possessive (apostrophe and s)

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See my blog postings about generally unreported California state and local
policy issues at www.laborissuessolutions.com

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**Draft Business Plan Comment
Type :**

2014 Business Plan RECORD DETAIL

Record Date : 4/8/2014
Submission Date : 4/8/2014
Affiliation Type : Individual
Interest As : Businesses And Organizations
Submission Method : Letter
First Name : Linda
Last Name : Johnson
Business/Organization :
City :
County :
Zip Code : 00000

Stakeholder Comments/Issues : Please see the attached comment letter on the Draft 2014 Business Plan.

Thank you,

Linda Johnson
City of Anaheim
Public Works Department

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Draft Business Plan Comment Type :

Attachments : 140407 NMEEKS re CHSR Draft 2014 Business Plan.pdf (47 kb)



City of Anaheim

DEPARTMENT OF PUBLIC WORKS

April 7, 2014

Chairman Dan Richard
Draft 2014 Business Plan
California High-Speed Rail Authority
770 L Street, Suite 800
Sacramento, California 95814

Subject: California High-Speed Rail - Draft 2014 Business Plan

Dear Chairman:

Thank you for the opportunity to review the Draft 2014 Business Plan for the California High-Speed Rail Project. This Plan, which will be presented to the Authority at its April 10, 2014 Board Meeting, reflects the Phase 1 high-speed rail system connecting San Francisco and Merced with Los Angeles and Anaheim through the phased and blended implementation of a one-seat ride adopted by the Authority in the 2012 Business Plan.

In 2012, the City of Anaheim entered into a Memorandum of Understanding with the California High-Speed Rail Authority and other participating Southern California transportation agencies, to identify and move forward with a program of early investments in the regional and local rail systems to facilitate the blended approach described in the 2012 Business Plan. The blended approach was developed in Senate Bill 1029 which calls for the CHSRA to provide \$1 billion in Proposition 1A funds by 2020 for potential early investment projects across the State. The Southern California region, specifically projects in the Anaheim-Los Angeles-Palmdale segment, were allocated \$500 million of that funding to be used by agencies through a Memorandum of Understanding (MOU) with CHSRA. Orange County has three projects eligible for Proposition 1A funding, including the State College Boulevard grade separation project in Anaheim which has been identified as a priority project along the LOSSAN Rail Corridor.

We support the Draft 2014 Business Plan as it reflects the Phase 1 Plan approved by the Authority in 2012, including the one-seat ride between San Francisco and Los Angeles/Anaheim. We also support collaboratively moving the blended projects forward as indicated in the MOU with the CHSRA to improve mobility, safety and the environment in Orange County and benefit travelers through greater interconnectivity.

Should you have any questions, please contact me at 714-765-4530 or NMeeks@anaheim.net.

Sincerely,

for

Natalie Meeks
Public Works Director

C: Paul Emery, Interim City Manager
Jamie Lai, Transit Division Manager
Project File

2014 Business Plan RECORD DETAIL

Record Date :	4/8/2014
Submission Date :	4/8/2014
Affiliation Type :	State Agency
Interest As :	State Elected
Submission Method :	Letter
First Name :	Cathleen
Last Name :	Galgiani
Business/Organization :	California State Senate
City :	Sacramento
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Zip Code :	95814
Stakeholder Comments/Issues :	
Draft Business Plan Comment Type :	
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California State Senate

SENATOR
CATHLEEN GALGIANI
FIFTH SENATE DISTRICT



STANDING COMMITTEES

AGRICULTURE
CHAIR

BUSINESS, PROFESSIONS &
ECONOMIC DEVELOPMENT

GOVERNMENTAL
ORGANIZATION

TRANSPORTATION &
HOUSING

April 3, 2014

The Honorable Dan Richard
Chair, CA High Speed Rail Authority
925 L Street, Suite 1425
Sacramento, CA 95814

Re: HSR Business Plan – Maximizing Existing Funds & Connecting to Job Centers

Dear Chair Richard and Members:

As the Author of Proposition 1A, the High-Speed Passenger Train Bond Act of 2008, I am writing to you in response to the recent release of the High Speed Rail Authority's Draft Business Plan, and to share my views and comments to optimize California's \$12.3 billion dollars in existing funding.

I request that the HSRA consider a development strategy for "high-speed connectivity to job centers" by connecting the high speed rail "test track" with regional rail lines. This strategy could provide early connectivity for California workers who commute on a daily basis to job centers in the Silicon Valley, Bay Area, and Los Angeles while long term planning for high speed rail continues.

I respectfully request that this opportunity for high-speed connectivity, which I outline below, be printed in the 2014 Business Plan, for public consideration and comment.

Maximizing Existing Funds from Prop 1A, PRIIA and ARRA

I have long envisioned an incremental approach of building new alignments in some areas, and using existing passenger rail tracks at the same time, as opposed to building track and infrastructure that only the High Speed Rail system can use.

The main advantage of this approach is to optimize federal and state funding, in the event that funding remains limited following the economic recession. By partnering with regional rail agencies and taking better advantage of our existing infrastructure, California can save tens of billions of dollars in construction costs, and provide "high-speed connectivity" to job centers long before the full system from San Francisco to Anaheim is built.

Furthermore, this incremental approach of building new alignments in some areas, and using existing passenger rail tracks at the same time, is consistent with the construction of high speed rail systems in other countries. It will allow the high speed rail system to begin generating revenue sooner, and phase in new high speed rail alignments as additional funding becomes available.

HSR and the Jobs Housing Imbalance

In the Bay Area and Silicon Valley, the jobs-housing imbalance is among the worst in the country. In 2008 alone, 900,000 Bay Area workers were found to live outside the county in which they worked. Faced with the nation's highest housing costs, Bay Area workers, unable to live close to their places of employment, make their homes in the "housing rich" Central Valley.

Between 2010 and 2040, the population of the nine-county San Francisco Bay Area is projected to grow by 2.1 million people and 1.1 million jobs. However, the "Draft Bay Area Plan" of 2013 forecasts construction of only 660,000 new housing units to be built during this same timeframe. Continued employment growth will only exacerbate this jobs-housing imbalance in the coming years. And projections estimate the number of daily commuters over the Altamont Pass will grow to 250,000 by the year 2020.

In Southern California, residents in the Antelope Valley have the longest commute time in the country. Cooperation between Metrolink and the High Speed Rail Authority will provide a pathway forward to achieve high speed commute times closer to 20 minutes from LA Union Station to Burbank, and 30 minutes, from Palmdale to Los Angeles, as opposed to the current 1 hour 50 minute commute time.

By cooperating with our regional rail partners, high speed rail can link job growth to housing production, and mitigate the myriad of air quality, transportation congestion, and quality of life problems associated with the jobs-housing imbalance.

Using Existing Savings to Finish the Test Track

In May 2012, the authority adopted the final EIR/EIS under CEQA for the Merced to Fresno segment - a distance of approximately 60 miles. In September 2012, the Federal Railroad Administration approved a Record of Decision under NEPA, thereby providing the required environmental clearance to proceed to construction.

In 2013, the High-Speed Rail Authority awarded the first construction contract for the first portion of California's high-speed rail system between Madera and Fresno. This contract came in nearly \$500 million below estimates, and additional savings are anticipated from the second contract.

Honorable Dan Richard
Chair, CA High Speed Rail Authority
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It now makes sense to also immediately proceed with construction of the high-speed rail line from Madera north to Merced, using the “savings” already appropriated to complete the Test Track. This work can be accomplished in addition to work that is currently underway between Fresno and Bakersfield.

Moreover, completing construction for the segment between Fresno and Merced, will lay the ground work for closing the gap between the high-speed “test track”, and existing passenger rail service to job centers in San Jose and San Francisco.

Bakersfield to the Silicon Valley and Bay Area

As you know, the Legislature approved the appropriation of federal trust funds, and matching Proposition 1A funds for construction of a 130 mile “Test Track” in the Central Valley.

In addition, the Caltrain corridor was allocated Prop 1A funding to electrify its track from San Francisco to San Jose, and implement a blended system for higher-speed service for commuter trains and future high-speed trains. And planning is already underway to bring the Altamont Commuter Express train (ACE) to the northern end of the high speed rail test track in Merced.

“High speed connectivity” from Bakersfield to the Silicon Valley and Bay Area can be expedited by connecting the test track in the Central Valley with the “Altamont Commuter Express” (ACE) system from Merced to Santa Clara, and connecting ACE with a newly electrified “Caltrain” system from Santa Clara to San Francisco.

This “high speed connectivity” to job centers will help mitigate the jobs-housing imbalance, and take tens of thousands of “texters and tweeters” off our already overburdened highways in the Bay Area.

Moreover, this “high-speed connectivity” from Bakersfield to San Francisco can be accomplished using the existing funds we have TODAY from Proposition 1A, federal stimulus grants under the American Recovery and Reinvestment Act (ARRA), and federal funding from the Passenger Rail Investment and Improvement Act of 2008 (PRIIA).

Los Angeles to the San Fernando and Antelope Valleys

In Southern California, commuters using Metrolink spend 1 hour and 50 minutes each way, traveling back and forth from Palmdale to Los Angeles. Cooperation between Metrolink and the High Speed Rail Authority will reduce daily commute times closer to 20 minutes from LA Union Station to Burbank, and 20 minutes, from Burbank to Palmdale.

LA Metro owns all the property within an existing rail “right-of-way” from LA Union Station to Sylmar, and Palmdale. Transportation leaders in the LOSSAN corridor (*San Luis Obispo to Los Angeles to San Diego*) have agreed to move forward with a “shared corridor” concept, and plans are underway to “double-track” much of this corridor so that high speed rail can run within the existing Metrolink corridor. This shared corridor concept will limit property acquisition needs, and reduce impacts to communities.

Meeting Greenhouse Gas Reductions by 2020

The HSR alignment in Southern California includes an elevated platform and passenger facility above the existing Los Angeles Union Station. Idling passenger trains account for 40 – 50 hours of continuous diesel emissions on a daily basis. Extending at least 4 LA Union Station platform tracks to exit at the south end of the yard, will increase station capacity and reduce idling of trains.

Construction improvements at LA Union Station can set the stage for High Speed Rail arrival, and achieve immediate reductions in greenhouse gas emissions. Funds derived from cap and trade revenue, matched with funding from Proposition 1A, could potentially advance construction in time to help the state meet its goal of cutting greenhouse gas emissions to 1990 levels by 2020.

Summary of My Requests for Consideration in the Business Plan

- 1) I urge the HSRA to identify opportunities for high speed rail to link job growth to housing production, and mitigate the myriad of problems associated with the jobs-housing imbalance in both Northern and Southern California.
- 2) I urge the High-Speed Rail Authority to consider using the “savings” already appropriated for the Test Track, to expand the section of the line that currently stops in Madera, and extend it to Merced to finish the Test Track.
- 3) I urge the HSRA to discuss an immediate strategy and cost estimate for connecting the Central Valley Test Track with the “Altamont Commuter Express” train (ACE) and “Caltrain” into the Silicon Valley and the Bay Area. **Connecting the Test Track from Bakersfield to San Francisco can be accomplished with the funding we have TODAY.**
- 4) I urge the HSRA to discuss a similar strategy and cost estimate for a “shared corridor” concept within LA Metro’s existing rail “right-of-way” from LA Union Station to Burbank, Sylmar, and Palmdale.

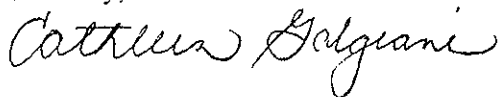
Honorable Dan Richard
Chair, CA High Speed Rail Authority
Page 5

- 5) Finally, I urge the Authority to outline a potential strategy and cost estimate for capacity improvements at LA Union Station that will reduce train delays by approximately 20 minutes, and reduce greenhouse gas emissions from idling trains. These immediate benefits can be achieved using a combination of Prop 1A dollars and future cap and trade funds.

As the Author of Proposition 1A, I offer these recommendations as a starting point to begin making immediate progress on implementing HSR, not as an ending point for the ultimate goal of a statewide system.

In closing, I respectfully ask that this letter be contained as written within the 2014 Business Plan, for public consideration and comment.

Sincerely,



Cathleen Galgiani
Senator, District 5

CG:cg

Cc: The Honorable Governor Jerry Brown
Nancy McFadden, Chief of Staff, Governor Jerry Brown
Senator Dianne Feinstein
Senator Barbara Boxer
Congresswoman Nancy Pelosi
The Honorable Joseph Szabo, Administrator, Federal Railroad Administration
Karen Hedlund, Deputy Administrator, Federal Railroad Administration
Peter Rogoff, Under Secretary for Policy, U.S. Department of Transportation
Honorable John Perez, Speaker of the Assembly
Honorable Darrell Steinberg, Senate President Pro Tempore
Honorable Mark DeSaulnier, Chair, Senate Transportation Committee
Honorable Bonnie Lowenthal, Chair, Assembly Transportation Committee
Honorable Bob Huff, Vice Chair, Senate Budget and Fiscal Review Committee
Honorable Jeff Gorell, Vice Chair, Assembly Budget Committee
Honorable Jim Beall, Chair, Senate Budget & Fiscal Review Subcommittee No. 2
Honorable Richard Bloom, Chair, Assembly Budget Subcommittee No. 3

Honorable Hannah-Beth Jackson, Chair, Senate Select Committee on Passenger Rail

Members of the State Senate

Members of the State Assembly

Michael Cohen, Director, Department of Finance, California

Keely Bosler, Chief Deputy Director, Department of Finance, California

Laura Schiller, Chief of Staff, Senator Barbara Boxer

Mr. Dan Richard, Director, High-Speed Rail Authority

Mr. Chris Ryan, Chief Deputy Director, High-Speed Rail Authority

Jim Hartnett, Vice Chairperson, High-Speed Rail Authority

Thomas Richards, Vice Chairperson, High-Speed Rail Authority

Richard Frank, Board Member, High-Speed Rail Authority

Patrick W. Henning, Sr., Board Member, High-Speed Rail Authority

Katherine Perez-Estolano, Board Member, High-Speed Rail Authority

Michael Rossi, Board Member, High-Speed Rail Authority

Lynn Schenk, Board Member, High-Speed Rail Authority

Thea Selby, Board Member, High-Speed Rail Authority

Will Kempton, Chair, California High-Speed Rail Peer Review Group

Brian P. Kelly, Secretary, California State Transportation Agency

Stacey Mortensen, Executive Director, San Joaquin Regional Rail Commission

Eric Garcetti, Mayor of Los Angeles

Anthony Silva, Mayor of Stockton

Edwin Lee, Mayor of San Francisco

Kevin Johnson, Mayor of Sacramento

Chuck Reed, Mayor of San Jose

Ashley Swearengin, Mayor of Fresno



**U.S. Department of
Transportation**
Office of the Secretary
of Transportation

Under Secretary for Policy

1200 New Jersey Avenue, S
Washington, DC 20590

May 25, 2011

Mr. Roelof van Ark
Chief Executive Officer
California High Speed Rail Authority
770 L Street, Suite 800
Sacramento, CA 95814

Dear Mr. van Ark:

It was a pleasure to meet with you last week while I was in Sacramento. As we discussed, the California Legislative Analyst's Office report released on May 10, 2011 suggested that you inquire of the U.S. Department of Transportation (U.S. DOT) with regard to the expenditure deadline for funds awarded to the California high-speed rail project, the ability to use federal funds as upfront funding, as well as the decisions that have been memorialized in agreements between the Federal Railroad Administration (FRA) and the Authority regarding the initial construction segment in the Central Valley.

As to the expenditure deadline, you should know this is a matter of law prescribed by both the Recovery Act and general appropriations law. Most Recovery Act funds provided by U.S. DOT to its state and local partners had a period of availability not to exceed Fiscal Year (FY) 2010. Fortunately, Congress recognized the unique, start-up nature of high-speed rail projects in this country and granted these funds a period of availability period through 2012, which together with 5 additional fiscal years for adjustment and liquidation (pursuant to 31 U.S.C §§ 1552 and 1553) creates the 2017 final deadline for expenditures.

This was one of the most lenient deadline for transportation funding in the Recovery Act, which was primarily designed to stimulate the economy in the short term during one of the country's most challenging economic times. We believe the time allowed is more than reasonable, and that deadlines are necessary to ensure that Recovery Act funds are used with all due speed. U.S. DOT has no administrative authority to change this deadline, and do not believe it is prudent to assume Congress will change it. We recommend that policy makers in California proceed on the basis that this deadline will remain fixed and make every effort to move the project forward accordingly.

On the matter of using federal funds up front to postpone use of the State's matching funds, we hope you will understand why this is not feasible. Both the fiscal year 2010 appropriations law and the FRA grant commitments require matching funds as a prerequisite for this project to go forward. California was awarded funding based in part on the impressive state match promised in the grant applications. Withholding these matching funds would put the California's high-speed rail project in serious jeopardy.

Mr. Roelof van Ark
Page 2

On the matter of the initial construction segment, we view the Central Valley as a logical place to begin building the core line to connect the San Francisco Bay Area with the Los Angeles Basin. We believe the decision to begin there was and remains a wise one. This selection was based on careful consideration of the options put forward by California through a competitive application process. First and foremost, construction can begin and be completed in the Central Valley more quickly than in other places. With this central piece built, more complex construction can extend north, south or simultaneously in both directions as additional sections of the project are ready to be built.

When construction of the Interstate Highway System began, the first segments to be completed were not in major population centers. The interstate began in the middle of the country, with the very first sections laid in Kansas and Missouri, allowing this core to extend to more populated areas and over more challenging terrain as the system grew. The Central Valley line is the essential core of any viable high-speed rail plan for California. It will support top speeds of 220 mph and will deliver jobs and future access to a part of the state that could use a serious economic boost. Once major construction is underway and approvals to complete other sections of the line have been obtained, the private sector will have compelling reasons to invest in further construction.

Sincerely,

A handwritten signature in black ink, appearing to read 'Roy Kienitz', with a long, sweeping horizontal line extending to the right.

Roy Kienitz
Under Secretary for Policy
U.S. Department of Transportation

2014 Business Plan RECORD DETAIL

Record Date : 4/8/2014
Submission Date : 4/8/2014
Affiliation Type : Individual
Interest As : Individual
Submission Method : Website
First Name : Ros Ann
Last Name : Martinez
Business/Organization :
City : Fresno
County : Fresno
Zip Code : 93706

Stakeholder Comments/Issues : i do not believe that this "High speed rail" will justify our problem of traveling to and from with in our state.

I believe that our Amtrack Serivce is what has taken us up and down the state. I love the Amtrack. It is joyful to experience. It is afforable. I have taken the Amtrack with my childrens local schools, churchs for various school events. When it work, leave it alone.

This money could really be spent on the future of our children. This money should be used to buy new computers for the schools, pay teachers that have been trained in not only education, but in different areas of the education system. This will create a better school system. In turn, smarter children. They will continue to achieve their goals.

I also would like to ask you honestly, "Do you think it will not poison our air, enviroment and is is really safe.

I have researched the HSR collissions in China, South America and all over the world. The rate of speed and the collision on impack is deadly.

I do not support this HSR. It is wrong. It is just not worth the problems that it will have.

**Draft Business Plan Comment
Type :**

2014 Business Plan RECORD DETAIL**Record Date :** 4/8/2014**Submission Date :** 4/8/2014**Affiliation Type :** Businesses and Organizations**Interest As :** Businesses And Organizations**Submission Method :** Website**First Name :** Robert**Last Name :** Garcia**Business/Organization :** IIS**City :** Fresno**County :** Fresno**Zip Code :** 93706

Stakeholder Comments/Issues : Regardless of the many jobs it will bring, there has not been sufficient testing preformed on the extent of damage control. What happens when an earthquake happens in California? Will the HSR rock with the earthquake? Will it de-rail in seconds? I do believe it will be a deadly outcome. Their is no guaranteed to this situation. However, there is a guaranteed we will continue to have earthquakes! This is California, and we have quakes all the time..

I believe more testing should be done. Do the right decision for California.
Stop it!

**Draft Business Plan Comment
Type :**

2014 Business Plan RECORD DETAIL

Record Date : 4/8/2014
Submission Date : 4/8/2014
Affiliation Type : Individual
Interest As : Businesses And Organizations
Submission Method : Letter
First Name : Aaron
Last Name : Fukuda
Business/Organization : CCHSRA
City : Hanford
County :
Zip Code : 93232
Stakeholder Comments/Issues :
Draft Business Plan Comment Type :
Attachments : CCHSRA.BP.0406141262_001.pdf (1 mb)
CCHSRA.envelope.pdf (782 kb)



April 6, 2014

Board Members
California High-Speed Rail Authority
770 L Street, Suite 800
Sacramento, CA 95814

David Valenstein
Federal Railroad Administration
1200 New Jersey Avenue SE MS-20
Washington, DC 20590

Subject: **Comments Concerning the California High-Speed Rail Authority's Draft 2014 Business Plan**

Dear Chairman Richard, Members of the CHSRA Board and Mr. Valenstein:

On behalf of Citizens for California High Speed Rail Accountability ("CCHSRA") I am writing to comment on the Authority's Draft 2014 Business Plan ("2014 Business Plan"). According to the agenda for the April 10, 2014 meeting, the Board of the California High-Speed Rail Authority ("Authority") will consider adopting the 2014 Business Plan. We urge the Board to deny adoption of this flawed draft business plan and to require substantial revisions to correct the many inadequacies, errors and omissions described below before adopting a revised business plan and submitting it to the Legislature.

Section 185033 of the California Public Utility Code, enacted by Senate Bill (SB) 1029, and amended by Assembly Bill (AB) 528, sets forth the statutory requirements for the Authority's 2014 Business Plan. For the convenience of the reader, I attach a copy of section 185033 of the Public Utilities Code as an Appendix at the end of this letter.

Below, we describe where the 2014 Business Plan has significantly changed from the Authority's 2012 Business Plan, where the Business Plan fails to adequately address the elements required by section 185033, and where the Plan neglects to point out uncomfortable and unfavorable facts concerning the project's status, progress and prognosis.

Changes in the Description of the Project and its Capital Costs.

According to subsection 185033(b)(1)(A), the 2014 Business Plan must include

"A description of the type of service the authority is developing and the proposed chronology for the construction of the statewide high-speed rail system, and the estimated capital costs for each segment or combination of segments."

The Authority submitted two applications to the Federal Railroad Administration (“FRA”) on October 1, 2009, applying for High-Speed Rail Intercity Passenger Rail (“HSIPR”) grant funds.¹ The two applications were applying for HSIPR funds to construct what the Authority described as 148 miles of HST track, consisting of the following two sections:

- (a) A 50-mile section that would start “south of downtown Merced in the vicinity of Merced Avenue and SR99 junction” to the “north side of Fresno ending before SR 180,” and
- (b) A 98-mile section from “downtown Fresno” to “the community of Rosedale [Bakersfield].”

Both applications assured the FRA that the Authority would provide 50% of the cost of the project in matching funds.

Amendment No. 1 of the Grant Agreement between the Authority and the FRA, dated December 22, 2010, described the construction project covered by the grant in Attachment 3, Statement of Work.² It was to be a 60-mile section from “Merced to Fresno” and a 115-mile section from “Fresno to Bakersfield,” for a total of 175 miles.

Then the Authority’s Revised 2012 Business Plan said that its Initial Construction Section (“ICS”) would be 130 miles, from Madera to somewhere north of Bakersfield, and would cost \$6.0 Billion.³

Now, two years later, the Authority is saying that the ICS will be a 24-mile section from Avenue 17, east of Madera to Mariposa Street in downtown Fresno (Construction Package 1), and a 70 – mile section from Fresno south to one mile north of the Tulare/Kings County line (Construction Packages 2 and 3),⁴ representing a total of 94 miles at a cost of \$6.0 Billion.

Sadly, the 2014 Business Plan fails to describe how the scope of this project has been steadily getting smaller and smaller, and it fails to point out how the Authority is now only able to build 54% of the miles of track it had planned on building in 2010 and only 72% of the miles of track it felt it could build in 2012. Rather than the Authority being fully transparent and forthright, it

¹ Authority’s October 1, 2009 Applications for High-Speed Intercity Passenger Rail Program Funds, OMB No. 2130-0583, pp, 4-5.

² *Grant/Cooperative Agreement between FRA and Authority, Amendment No. 1, dated December 22, 2010*, p. 15 of Attachment 3 (17 pdf), http://www.hsr.ca.gov/docs/about/funding_finance/funding_agreements/FR-HSR-0009-10-01-01.pdf.

³ Authority’s Revised 2012 Business Plan, p. 3-2.

⁴ Authority’s Draft 2014 Business Plan, p. 26.

falls to us, members of the public, to bring these harsh and inconvenient truths to the attention of the rest of the public and to our State Legislators.

Subsection 185033(b)(1)(A) of the Public Utilities Code also requires the 2014 Business Plan to include “*the estimated capital costs for each segment or combination of segments.*”

The Authority asserts in Exhibit 1.1 of its 2014 Business Plan that the 520-mile Phase 1 segment that is supposed to connect San Francisco to Los Angeles/Anaheim is estimated to cost \$68 Billion in year-of-expenditure dollars (YOE\$).⁵ It says that its shorter version – a 410-mile segment that is supposed to connect San Jose to the San Fernando Valley – is estimated to cost \$51 Billion (YOE\$). Finally, it shows that its Initial Operating Section (IOS), a 300-miles section that is supposed to connect Merced to the San Fernando Valley, is estimated to cost \$31 Billion (YOE\$).⁶ These numbers do not differ from those set forth in the Authority’s Revised 2012 Business Plan.⁷

Current cost estimates differ markedly from these prior cost estimates, therefore making the 2014 Business Plan inconsistent and unreliable. The Authority recently prepared a “Project Update Report to the California State Legislature,” dated November 15, 2013.⁸ Under the section on “Construction Costs,” Table 2 sets forth the 2012 Business Plan Cost Estimates, expressed in year-of-expenditure dollars for each section:

Merced-Fresno	\$5,482 Million
Fresno-Bakersfield	\$7,711 Million ⁹

The Report states that the above figures include \$8 billion in program wide costs (rolling stock, etc) that were prorated across project sections, and that these program wide costs represent about 3% of the project’s cost. Therefore, if we reduce the above figures by 3%, the remaining costs for these sections would be:

Merced-Fresno	\$5,318 Million
Fresno-Bakersfield	<u>7,480 Million</u>
Total	\$12,798 Million

The Authority’s staff also prepared another recent report: a 70-page document entitled “Staff Recommendation: Preferred Alternative – Fresno to Bakersfield Section,” dated November,

⁵ 2014 Business Plan, p. 16.

⁶ Ibid., p. 26.

⁷ Revised 2012 Business Plan, Exhibit 3-7, p. 3-11.

⁸ *Project Update Report to the California State Legislature, November 15, 2013*, p. .

⁹ Ibid., p. 12.

2013.¹⁰ It estimated the preferred alternatives for the Fresno to Bakersfield section will cost \$7.174 Billion (in 2010 dollars).¹¹ Of course, to be consistent and to allow comparison, this number should be escalated to reflect year-of-expenditure costs. Assuming construction primarily occurs in 2015, and assuming a 3% per year cost escalator, this number swells to \$8.074 Billion.

As can be seen, the Authority's most recent estimates do not appear to agree, except that it is clear that its costs are escalating and exceed by a considerable amount the approximately \$6.0 billion it had from federal grants and state bond (Proposition 1A) funds.

The 2014 Business Plan cost estimates also do not appear to consider other Project costs, including, but not limited to:

- Costs associated with relocated and new infrastructure required to make way for the HST Project, as reflected in the Master Agreements with various agencies (and task orders attached to these agreements);
- Change orders that may be required during Project construction; and
- The costs of mitigating project impacts (e. g., compensating for loss of wildlife habitat, loss of carbon sequestering from removed trees and for agricultural preservation).

The 2014 Business Plan also appears to substantially underestimate the costs associated with acquiring property necessary for the Project's right-of-way.

The 2014 Business Plan and the supporting technical appendices do not provide any substantiation for the Authority's current cost estimates. Without detailed substantiation the public and decisionmakers are unable to verify the accuracy of the estimates (e. g. O&M costs, ridership, etc.). Based on our review of "Task Orders" concerning relocation of infrastructure to make way for the ICS, the initial construction for Construction Package 1 ("CP1") of the ICS, the consultant contracts, and the major hurdles that the Authority faces in building Project sections through major metropolitan areas and over mountain ranges, we are convinced that the 2014 Business Plan substantially underestimates the projected costs of the Project.

Given the recent cost escalation for the east span of the Bay Bridge and the cost escalation for Boston's "Big Dig" project, it is imperative that the Authority substantiate its cost estimates and put measures in place to prevent cost from escalating. Without protective measures, taxpayers will bear the risk of higher Project costs.

¹⁰ Authority's *Staff Recommendation: Preferred Alternative – Fresno to Bakersfield Section*, November, 2013, <http://www.hsr.ca.gov/docs/brdmeetings/2013/brdmtg-item2-attach-fres-baker-staff-recommend-prefer-alternative.pdf>.

¹¹ *Ibid.*, p. 3-19.

Funding Shortfall.

Subsection 185033(b)(1)(E) of the Public Utilities Code requires the 2014 Business Plan to include “*the total anticipated federal, state, local, and other funds the authority intends to access to fund the construction and operation of the system, and the level of confidence for obtaining each type of funding.*”

On November 4, 2008, the voters of California approved the “Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century [Prop 1A],” a state ballot measure that would provide for the sale of up to \$9.0B in state general obligation bonds to construct a high-speed rail project. But the measure enacted a number of conditions, one of which was that the use of Prop 1A bond proceeds could not exceed 50 percent of the total cost of construction for each corridor or usable segment.¹²

On October 1, 2009, the Authority submitted a series of applications to the FRA for grant funds under the FRA’s HSIPR Program. The Authority was seeking grant funds for its Merced to Fresno and Fresno to Bakersfield sections of its HST project.¹³ The Authority promised in its applications that the Authority would provide 50% matching funds that would come from state bonds and local and private funding. The applications also represented that the project would build 50 miles of new, high-speed-capable track and affiliated structures from Merced to Fresno, and 98 miles of the same from Fresno to Bakersfield, for a total of 148 miles.

In response to the foregoing applications, the Authority received a number of grants in 2010 and 2011. The Authority’s November 3, 2011 Funding Plan summarized the total amount of federal grants it received and the amount of state matching funds that it would use on its Merced to Bakersfield HST project:

ARRA (HSIPR) Pre-construction and construction funding	\$2,387 Million
FY 2010 Appropriation construction funding	929 Million
State matching funds	<u>2,684 Million</u>
Total for the Merced to Bakersfield project	\$6,000 Million ¹⁴

The terms and obligations of the above grants were consolidated and spelled out in the Grant/Cooperative Agreement, Amendment No. 5, dated December 5, 2012. On pages 2 and 3 (4 and 5 pdf) of the Agreement the total cost of the Authority’s project (148 miles from Merced to

¹² California Streets and Highways Code, Section 2704.08(a).

¹³ http://www.hsr.ca.gov/About/Funding_Finance/federal_stimulus.html.

¹⁴ Authority’s November 3, 2011 Funding Plan, p. 8 (15 pdf), http://www.hsr.ca.gov/about/funding_finance/Funding_Plan_2011.pdf.

Bakersfield) was estimated at \$5,058 Million.¹⁵ It also shows updated figures for the federal grants and the Authority's cost sharing responsibility: \$2,553 Million from FRA funding assistance, and \$2,506 Million from Grantee's matching contributions.¹⁶

The Authority applied for additional federal high-speed train funding in 2011, but failed to receive any. Since then the Authority has not submitted applications for more federal funding. Considering the huge federal deficits, and being mindful that Congressional representatives from other states are unlikely to vote for additional high-speed rail moneys for California unless they can get like amounts for their own states, the prospects of getting meaningful grants from the feds in the foreseeable future seem unlikely. As for private funding, the Authority has been pursuing it for years, but has yet to identify a single willing investor.

The 2014 Business Plan confirms that the State Legislature appropriated \$6.0 Billion for the construction of the ICS by passage of SB 1029 in July, 2012.¹⁷ The Business Plan also states that it needs a total of \$31.2 Billion (year-of-expenditure dollars) to complete the IOS from Merced to the San Fernando Valley (again, this estimate is unsubstantiated and is likely unrealistically low). With only \$6.0 Billion, the Authority admits it is \$25.2 Billion short of being able to complete and put into operation HST service.¹⁸ Yet, Exhibit 6.5 of the Business Plan lists this deficiency of \$20.9 Billion as "Uncommitted Funds."¹⁹ If one were not careful, one would be fooled into the erroneous impression that the Authority had identified these funds, although not yet committed. But that is not the case at all; to be perfectly accurate and forthright, the Authority should have disclosed and admitted that after four years of trying, it has been unable to secure any additional federal funds. Rather than use the term "Uncommitted Funds," the \$20.9 Billion should have been called "Funding Shortfall." The Plan simply does not explain where the Authority will get the \$20.9 Billion necessary to complete the IOS.

When the Authority first applied for federal grant moneys in 2009, it claimed that it would construct 148 miles of HST-capable track and supportive improvements – from Merced to Bakersfield – at a cost of \$5 billion. Today, it is estimating that it will need between \$12.0 and \$14.0 billion to construct from Merced to Bakersfield. With only \$6.0 billion, the Authority has been forced to continue downsizing the project significantly. It is why they are only planning to build around 94 miles of track at the present time – from Avenue 17, east of Madera to one mile north of the Tulare/Kern County line, about 40 miles north of Bakersfield.

¹⁵ *Grant/Cooperative Agreement between FRA and Authority, Amendment No. 5, dated December 5, 2012*, p. 2-3 (4-5 pdf), http://www.hsr.ca.gov/docs/about/funding_finance/funding_agreements/FR-HSR-0009-10-01-05.pdf.

¹⁶ *Ibid.*, p. 8 (10 pdf).

¹⁷ 2014 Business Plan, p. 21.

¹⁸ *Ibid.*, p. 53.

¹⁹ 2014 Business Plan, Exhibit 6.5, p. 53.

One must therefore ask: Is it responsible for the Authority to commence construction on the ICS without having first secured the funding necessary to complete the IOS? If the Authority cannot complete a usable segment, all of the expense, destruction, dislocation and other impacts will have been borne unnecessarily. The likelihood of the approach the Authority is proposing in the Business Plan resulting in a stranded investment is not only highly possibly, but more realistic than a high-speed rail system connecting Merced to the San Fernando Valley.

Court Decision: Authority Failed to Comply with Mandatory Prop 1A Requirements and there is NO mention of this significant risk.

The funding situation gets dramatically worse when one considers the effects of recent court rulings. In 2011, the County of Kings, farmer John Tos, and landowner Aaron Fukuda filed a lawsuit against the Authority and other defendants, contending that the Authority and the other defendants had violated a number of the requirements set forth in the Proposition 1A state ballot measure.²⁰ Following lengthy briefings and a hearing, Sacramento County Superior Court Judge Michael Kenny issued his decision on August 16, 2013.

Proposition 1A, entitled the “Safe, Reliable, High-Speed Passenger Train Bond Act for the 21st Century,” was approved by the voters of California in 2008. The measure added a number of new sections and subsections to the California Streets and Highways Code. One of these was Subsection 2704.08(c), which specified that the Authority had to approve a detailed funding plan. In addition to a number of other elements, this funding plan was required to (1) identify its “usable segment,” then (2) identify the sources of all funds to be invested in the usable segment, and then (3) certify that all necessary project level clearances for the usable segment had been completed.

The Authority approved its funding plan dated November 3, 2011. Of the two “usable segments” identified in the funding plan, the Authority later chose the 300-mile section from Merced to the San Fernando Valley, and identified it as its Initial Operating Segment (IOS), which it estimated would cost approximately \$31 billion.²¹ The Court agreed with the Plaintiffs that the funding plan had only identified the funding sources for the Initial Construction Section (ICS) - the 130-mile section from Madera to Bakersfield: \$3.316 billion from federal grants and \$2.684 billion from Prop 1A bond proceeds, for a total of \$6.0 billion. What was the source of the other \$25 billion needed for its Merced to San Fernando Valley “usable segment?” Since the funding plan did not identify them, the Court concluded that the Authority had failed to comply with that required element of Section 2704.08(c).

²⁰ *Fukuda vs California County of Kings, John Tos, Aaron High-Speed Rail Authority, et al*, Superior Court, County of Sacramento, Case No. 34-2011-CU-MC-GDS.

²¹ Authority’s 2012 Business Plan, Executive Summary, pp. ES-13 (15 pdf), ES-15 (17 pdf), http://www.hsr.ca.gov/docs/about/business_plans/BPlan_2012ExecSum.pdf.

The Court also agreed that the Authority's funding plan had failed to certify that all necessary clearances for the IOS had been completed. While the Authority claims that it had completed the environmental clearances for its Merced to Fresno section,²² that is not true; a section that it calls the "Chowchilla Wye" has not been completed. Also, its Fresno to Bakersfield EIR/EIS has not been finalized, and the draft EIR/EIS for the sections between Bakersfield and the San Fernando Valley have not been released.

In short, the Court concluded that the Authority's funding plan did not comply with all of the requirements of Section 2704.08(c). The Court put off its decision as to the remedies until a later hearing date. After the remedies hearing, the Court issued its remedies decision on November 25, 2013.

The Court issued a Writ of Mandate, directing the Authority to rescind its approval of its November 3, 2011 funding plan. The Court also decided that, other than certain costs permitted under Section 2704.08(g), no Prop 1A bond proceeds can be expended for construction or real property acquisition until the second funding plan, described in Section 2704.08(d), is approved by the Authority, and that this may not occur until a funding plan fully complying with all of the requirements of section 2704.08(c) is approved first.

This is significant. The Court has effectively limited the use of future Prop 1A bond funds to complete the ICS. This will remain true until the Authority can comply with Section 2704.08(c) by identifying the source of the other \$25 billion needed to complete the IOS. Easy? Obviously not; the Authority has been trying to obtain these additional funds from federal, other state and private sources for more than four years. Yet, it remains empty-handed and is likely to remain so for the foreseeable future.

Suggestions are being made that the Authority will develop a new funding plan that will comply with all of the requirements of Section 2704.08(c). For example, it has been suggested that the Authority will adopt a shorter "usable segment," such as the 130-mile Madera to Bakersfield section. The problem is that even with Prop 1A matching funds the Authority would have only \$6.0 billion to build a segment that, according to the Authority's recent Report to the State Legislature, will cost about \$12.0 billion. Hence, such a funding plan would again fail to identify all of the funds needed to complete its "usable segment." In addition, a funding plan must include a ridership and revenue estimate that confirms that no government subsidy will be needed for its operations. The reason the Authority originally adopted the 300-mile Merced to San Fernando Valley as its usable segment was because it claimed that it was the shortest segment that could generate sufficient ridership to meet this requirement.

Because of Judge Kenny's decision, the Authority is now faced with losing almost half of what already had appeared to be a major shortfall of the funding needed to complete its ICS. In a desperate move, the Authority on January 24, 2014 filed a Petition for an Extraordinary Writ of

²² 2014 Business Plan, Exhibit 1.2, p. 26.

Mandate with the California Supreme Court. Trying to bypass the appellate court (Third District Court of Appeals) and going directly to the Supreme Court was an extraordinary and unprecedented move. In its Petition, the Authority declared that Judge Kenny's decisions "imperil the project," that the Authority "will suffer irreparable injury absent immediate intervention by the [Supreme] Court," and that these circumstances "warrant extraordinary review by this Court." But such alarmist claims did not sway the Supreme Court. On January 29, 2014, the Court issued an order refusing to hear the Petition, and ordered the matter transferred to the Third District Court of Appeals, where it is now pending.

Let us assume that Judge Kenny's decisions are reversed by the appellate court, and that the Authority is no longer barred by Judge Kenny's decisions from accessing Prop 1A bond funds. Where does the Authority find itself? It finds itself bumping up against the provisions of Streets and Highways Code subsection 2704.08(d). This subsection states that "Prior to committing any proceeds of [Prop 1A] bonds ... the authority shall have approved ... a detailed funding plan...." This subsection (d) funding plan is different from a subsection (c) funding plan that Judge Kenny dealt with. Still, a (d) funding plan requires many of the same elements as a (c) funding plan, some of which Judge Kenny declared the Authority had not complied with. A (d) funding plan must also designate a "usable segment," and must "identify the sources of all funds to be used" on it, including "allocations or other assurance received from governmental agencies." It must also contain ridership and revenue projections that show that the usable segment "will not require an operating subsidy." Just as the Authority was unable to meet the (c) funding plan requirements, it seems certain that the Authority will also be unable to meet the requirements of a (d) funding plan. In short, it makes no difference whether the appellate court upholds or reverses Judge Kenny's decisions; the Authority will still be unable to use Prop 1A bond proceeds.

The possibility also looms that the Authority is on the cusp of being denied access to the federal funds. By legislation and grant conditions, the federal grants must be matched. The December 5, 2012 Grant/Cooperative Agreement between the Authority and the FRA expressly requires the match. Some of the individual federal grants require a 50% match from California funds (one dollar of California funds for each dollar of federal grant funds). Other federal grants require smaller state matches. Together, the aggregate federal grants to the Authority average about a 49% match from California sources. Under the Grant Agreement, the FRA has the right to cease supplying grant funds if California's ability to match with bond funds becomes uncertain.²³ Given Judge Kenny's recent momentous decision, it puts into serious question whether the FRA can legally release any more grant funds to the Authority.

²³ *Grant/Cooperative Agreement between FRA and Authority, Amendment No. 5*, dated December 5, 2012, Attachment 2, pp.2-3 (4-5 pdf), and pp. 37-38 (40-41 pdf), http://www.hsr.ca.gov/docs/about/funding_finance/funding_agreements/FR-HSR-0009-10-01-05.pdf.

What if the FRA refuses to exercise its right to suspend further advances of federal grant moneys, notwithstanding the problems described above? It means that the Authority only has \$3.2 billion in federal money to spend on its Madera to Bakersfield project. Compared to its most recent estimated cost of about \$12 billion for the Merced to Bakersfield section, \$3.2 billion represents only 27% of the amount the Authority estimates it needs to build it, and only about 9% of the \$31.0 billion it estimates it needs to build its IOS from Merced to San Fernando Valley. (Assuming these cost estimates are accurate, which, as explained above, is a dubious assumption.)

This leads to the next logical question: Can or should the Authority proceed with the Project by only using the \$3.2 Billion in federal grant funds? If it was only able to use the federal funds, perhaps it would be constrained to construct only half of the 94 miles – perhaps 47 miles. What kind of project is that? The answer is: An embarrassing boondoggle that would haunt the politicians and decisionmakers whose fingerprints are found on this project. You must ask yourselves, is it responsible to proceed with project construction before funding for a usable segment (i.e., a portion that will deliver functional and effective HST service) has been identified and secured? Prop 1A contemplated this and required the Authority to identify all funding for the first usable segment before proceeding.

Given these limited funds, what would the Authority be able to build? A 40 to 50-mile section of unusable, weed-growing dirt berms with numerous grade-separated road crossings? Would ballast, track, and switching and control systems be installed? If so, how many miles? What about electrification, maintenance yards, passenger stations, and rolling stock? The Authority has not discussed any of these possible financial risk scenarios or provided the public and State Legislators with any of this information. Instead, as with previous Authority Business Plans, the 2014 Business Plan is a one-sided, white-washed propaganda piece that is full of Pollyanna scenarios and lacking disclosure of these “inconvenient truths.”

The Governor has been touting that he would propose to the Legislature that \$250 million in Cap & Trade funds be made available to the project as a financial crutch.²⁴ But that is less than 1% of the cost of the state-wide project. Keeping in mind that Phase 1 (Bay Area to LA Area) is estimated to cost \$68 billion, and using the Authority’s annual construction escalator rate of 3%,²⁵ the cost of the project will be increasing at the rate of about \$2.0 billion per year. Hence, even with Cap & Trade funds, the project would be losing ground.

²⁴ 2014 Business Plan, p. 15.

²⁵ Revised 2012 Business Plan, p. 3-2.

Lack of Independent Utility.

The Authority admitted early on in its November 3, 2011 Funding Plan that “the Authority does not plan to operate high-speed train service along the ICS [its Merced to Bakersfield section]. Such service will only occur upon completion of the Initial Operating Section [300-mile section from Merced to San Fernando Valley].”²⁶

However, the State of California has only granted the Authority authorization and responsibility over “high-speed passenger train service,” which it defines as trains running in excess of 125 mph.²⁷ The Authority has no authority over non-high-speed trains, such as Amtrak. Currently, Caltrans is responsible for operating the San Joaquin Amtrak route, which currently runs fourteen daily passenger trains through the San Joaquin Valley on Burlington Northern Santa Fe (BNSF) tracks.²⁸ These trains stop at Amtrak stations in Merced, Madera, Fresno, Hanford, Corcoran, Wasco and Bakersfield. The San Joaquin route is the fifth busiest Amtrak corridor in the nation, with a ridership of over a million passengers per year.²⁹ However, the Authority’s new track alignments between Madera and the Kern County line leave the BNSF corridor for many stretches and they bypass the current Amtrak stations in Fresno, Hanford and Corcoran by significant distances. New stations would have to be built on the ICS in order to allow interim Amtrak service. Are these new stations factored into the cost of the ICS?

The Authority claimed in its Petition for Exemption to the federal Surface Transportation Board (STB) that its Fresno to Bakersfield section, together with its Merced to Fresno section, “will be available for immediate use for improved and faster service on Amtrak’s San Joaquin intercity passenger rail line prior to initiation of HST service on the line in 2022, thus providing for independent utility of the constructed segment.”

The Authority states in its 2014 Business Plan that the STB granted the Authority’s Petition for Exemption for the Merced to Fresno section of its HST project.³⁰ But when the STB granted the Petition, it wrote on pages 5 and 6 of its June 13, 2013 decision that:

“The Authority asserts that use of this initial section prior to the start of high-speed rail service will meet one of the requirements to receive ARRA funding. Under HSIPR guidelines, to receive ARRA funding, any project must have

²⁶ Authority’s November 3, 2011 Funding Plan, p. 4 (11 pdf), http://www.hsr.ca.gov/docs/about/funding_finance/Funding_Plan_2011.pdf.

²⁷ California Public Utilities Code, Section 185032.

²⁸ San Joaquin Amtrak Schedule, <http://www.amtrak.com/ccurl/946/633/san-joaquin-schedule-071513.pdf>.

²⁹ San Joaquin Joint Powers Authority website, Item 4.3 of Staff Report for May 24, 2013 Board Meeting, pp. 17-18 pdf, <http://www.acerail.com/about/regional-governance-for-san-joaquin-rail-service>.

³⁰ 2014 Business Plan, p. 21.

independent utility. To have independent utility, the project, as part of the creation of a new high-speed rail service, needs to provide ‘tangible and measurable benefits even if no additional investments’ are made in further developing the same high-speed rail service. The Authority states that this requirement is met in this case because the first step of the Project’s implementation plan will be to improve the existing San Joaquin intercity service [San Joaquin Amtrak].”³¹

The STB’s June decision went on to add on page 12 that “The Authority states that the first portion of the HST System to be constructed ‘will become operational by allowing Caltrans to operate expanded San Joaquin [Amtrak] service between Bakersfield and Merced’” and that “making this portion of the HST System available for immediate use by Amtrak provides for ‘independent utility’ consistent with the funding requirements of ARRA.”

The STB’s finding of “independent utility” relied upon the Authority implying that Caltrans would run its Amtrak trains on the new track. The STB seemed to have also assumed that the Authority’s project included the concurrent construction of new train stations along the new track at Fresno, Hanford and Corcoran. We understand, however, that the Authority has no plans for a station at Corcoran, and that it has no funding allocated for the construction of new stations along the new tracks at Fresno and Hanford. Rather, Fresno and Hanford are expected to build stations at their own expense. But we have seen no evidence that either city has the financial wherewithal to accomplish this task. If this is the case, there will be no independent utility for the new tracks because there will be no stations adjacent to the new track from which passengers can board and detrain.

Not only was the Authority less than forthright to the STB and in its draft 2014 Business Plan regarding the station issue, but it also did not disclose the existence and effect of AB 1779. This California statute was signed into law by Governor Brown on September 29, 2012, six months before the Authority filed its Petition for Exemption on March 27, 2013 for its Merced to Fresno HST section.

AB 1779 provides for the creation of a San Joaquin Joint Powers Authority (JPA). The administration and operation of the San Joaquin Amtrak route is to be transferred from Caltrans to the JPA sometime between June 30, 2014 and June 30, 2015. The JPA came into existence by the swearing in of Board Members and the adopting of By-Laws at its Board meeting on March 22, 2013.³² During its Board meeting of September 27, 2013, the JPA adopted a schedule whereby it plans to conclude and sign an Interagency Transfer Agreement, transferring

³¹ Surface Transportation Board, Docket No. FD-35724-0, June 13, 2013 Decision, p. 8.

³² San Joaquin Joint Powers Authority website, Board Meeting Agenda and Minutes of March 22, 2013, <http://www.acerail.com/about/regional-governance-for-san-joaquin-rail-service>.

administration of the San Joaquin Amtrak route from Caltrans to the JPA on or about June 30, 2014.³³

It appears that decisions regarding the running of Amtrak trains, including whether any of them would be operated on the new track, will be that of the JPA, not Caltrans. Why has the Authority not disclosed the enactment of AB 1779 and its effect? Why does the Authority mislead people by suggesting that Caltrans would decide that Amtrak trains would run on the new track and that Caltrans would have the authority to make those decisions when the new track was completed? How could the Authority do this when it knew or should have known that Caltrans would not be the agency making that decision? Will the JPA eventually decide to operate Amtrak trains on the new track? We do not know. But the possibility exists that the JPA will eventually decide that it sees no net benefit in diverting Amtrak trains off of its existing BNSF route, especially if there are no passenger stations to serve the new line.

AB 1779 raises another troublesome problem. It has been reported at JPA Board meetings that train fare revenues only cover 55% of the operational costs of the San Joaquin Amtrak corridor. The other 45% must be covered by an annual subsidy from the State. In fact, a staff report stated that “the San Joaquin intercity passenger rail service is expected to continue to depend on state funds to subsidize its operations.”³⁴ AB 1779 goes on to provide that the State will guarantee subsidizing the San Joaquin operations for three years immediately following the effective date of the transfer agreement, but makes no provision for State financial support thereafter.³⁵

Since the newly-created JPA has no revenue-raising ability besides train fares, it does not appear to have the ability to cover the 45% operational shortfall without state support. How can we be sure that four or more years from now there will even be an Amtrak passenger train service to run on the new track?

Given these facts, it is appropriate to return to the important “independent utility” issue addressed in the STB’s June 13, 2013 decision: Does the Project provide “tangible and measurable benefits even if no additional investments are made” in further developing the high-speed rail project? The answer, it seems, will depend on whether upon completion of construction of the Madera to the Tulare/Kern County line section there will be passenger train stations to serve the new track, and even if there are, will there be a San Joaquin Amtrak operating at the time? And if there is, will the JPA see sufficient benefit to decide to run Amtrak trains on the new track? Neither the Authority nor the JPA has answered these critical questions.

³³ Ibid., Board Meeting Agenda and Minutes of September 27, 2013.

³⁴ San Joaquin Joint Powers Authority website, Item 4.3 of Staff Report for May 24, 2013 Board Meeting, p. 18 pdf.

³⁵ Subsection (d) of amendment to Section 14070.4 of the California Government Code (AB 1779).

It should also be noted that, while the STB did grant the Authority's Petition for Exemption for its Merced to Fresno section, the Authority's Petition for Exemption for its Fresno to Bakersfield section, which was filed with the STB on September 26, 2013, is still pending. The STB has not yet granted the second Petition and the outcome is far from certain. The granting of the first Petition barely passed on a 2-1 vote. The term of one of the three STB Board Members expired on December 31, 2013, and the leaving Member was one of the two who voted for granting the first Petition. The Board Member voting against the granting of the first Petition is still on the STB Board, and her term does not end until December 31, 2015.

The STB is awaiting Senate confirmation of a replacement appointment. However, the appointee designate, Debra Miller, was a recent employee of Cambridge Systematics, a consulting firm that worked on the ridership forecasts for the Authority. Because of this, Ms. Miller should have to recuse herself from participating in the decision on this second Petition. Therefore, there is a very good chance that the Petition for Exemption may not be granted by the STB because of a deadlocked 1-1 vote.

Lack of Railroad Master Agreements.

The December 21, 2012 Amendment No. 5 to the Grant Agreement between the Authority and the FRA states on page 8 that

"The Grantee [Authority] represents that it has entered into and will abide by, or will enter into and abide by, a written agreement, in form and content satisfactory to FRA, with any railroad owning property on which the Project is to be undertaken, ... *The Grantee may not obligate or expend any funds (federal, state, or private) for final design and/or construction of the Project, or any component of the Project, without receiving FRA's prior written approval of the executed railroad agreement satisfying the requirements of this section.*"³⁶
[Emphasis ours]

Many miles of the Authority's proposed Madera to Bakersfield alignments are located contiguous to, and maybe even within, the rights-of-way of both the Union Pacific Railroad (UP) and the Burlington Northern Santa Fe Railroad (BNSF). Therefore, the Authority needs to have entered into Master Agreements with the UP and BNSF before the Grant Agreement allows the Authority to commit or spend any of the federal grant funds for design and construction of its project.

³⁶ *Grant/Cooperative Agreement between FRA and Authority*, Amendment No. 5, dated December 5, 2012, p. 8 (10 pdf), http://www.hsr.ca.gov/docs/about/funding_finance/funding_agreements/FR-HSR-0009-10-01-05.pdf.

Has the Authority entered into such Agreements? The Authority's 2014 Business Plan admits that it has not:

"Given the interface with existing railroad right-of-way, there is a need for agreement with the railroad companies. At this time there is not a master agreement in place between the Authority and Burlington Northern or between the Authority and Union Pacific Railroad ..."³⁷

So, one must ask, what is the problem or holdup? To answer this question, one can see that the UP expressed concerns and objections to the Authority's plans in the past. It submitted a letter dated April 23, 2010 to the Authority, in which the letter concluded with:

"The Union Pacific made its position clear regarding use of its rights of way from the high-speed rail corridor on many occasions. Union Pacific objects to the location of the high-speed rail corridor so close to UP's operations as to be a safety hazard. Finally, Union Pacific objects to the location of the corridor so that it takes existing rail-served customers or acts as a barrier to all future rail-served developments."

The UP submitted a subsequent comment letter to the Authority dated October 12, 2011, again objecting to its proposed interference with potential future customers.

The BNSF has expressed similar concerns. In a recent April 16, 2013 letter to the Authority, BNSF said that there is "too much ambiguity at this time for a productive review of these plans [plans described by the Authority in its Merced to Fresno EIR and its March 26, 2013 STB Petition for Exemption]." The letter went on to ask the Authority for a draft agreement that "contains a scope of work and budget that can be reviewed and for the Authority to specify the corridor alignment." It seems unlikely that the latter request has been complied with since the Authority's Board has not yet acted upon adopting the final alignments, which are to be selected from a number of alternatives.

The BNSF letter also stated that the foregoing draft agreement must "address the safety implications, risk mitigation strategy and liability associated with any construction near or adjacent to our track as well as for future operations." The letter went on to say that the "BNSF has not agreed to or acquiesced in any proposed or potential alignment or change in service in the San Joaquin Valley involving our railroad, whether on, near, or adjacent to our current right of way, or which could affect access to our line by present or future freight customers."

This language shows that the BNSF is as concerned as the UP about the proposed alignments blocking future access to their tracks. Equally significant, it suggests that any changes or decisions in Amtrak traffic may also need the consent of BNSF. Moving Amtrak trains from BNSF lines to the new lines could affect the BNSF's passenger and freight traffic scheduling,

³⁷ 2014 Business Plan, p. 70.

and could reduce BNSF's income from providing track use for Amtrak operations. A contract may exist between BNSF and the administrator of Amtrak that deals with these issues. If this is the case, then whether the Madera to Kern County line section would be used by any Amtrak trains and, therefore, whether the new line would have "independent utility," would depend on the decisions of not only the JPA but also of the BNSF.

Under the clear, unmistakable requirements of the Grant Agreement, it is difficult to see how the FRA can legally allow the Authority to obligate or spend federal grant funds before the essential requirement of master agreements with the railroads has been satisfied.

Ridership Forecast for Segments.

Subsection 185033(b)(1)(B) of the Public Utilities Code requires that the 2014 Business Plan include

"A forecast of the expected patronage, service levels, and operating and maintenance costs for the Phase 1 corridor ... and by each segment or combination of segments for which a project level environmental analysis is being prepared for Phase 1. The forecast shall assume a high, medium, and low level of patronage and a realistic operating planning scenario for each level of service."

As will be noted, the 2014 Business Plan must not only contain a section where it forecasts ridership, it must also forecast ridership for each segment. Fortunately, the Plan does provide a forecast for high, medium and low levels of ridership for the IOS (Merced to San Fernando Valley), but we do not believe them to be anywhere near credible.

The Business Plan's 2025 ridership forecasts for the IOS range between a high of 14.0 million annual passengers to a low of 7.4 million passengers. Keep in mind that this forecast is in light of no HST service being available to those intending to travel between the Central Valley and the Bay Area; it would only be available for those wanting to travel between the Central Valley and the LA Area.

We already know that the San Joaquin Amtrak service - the fifth busiest corridor in the nation - has an annual ridership of about one million passengers per year. Yet, in just eleven years (2025), with HST service being available only along the IOS³⁸ - between Merced and the San Fernando Valley - the Authority is forecasting an astonishing increase in passenger train ridership to no less than 7.4 million passengers per year.

These numbers suggest a lack of credibility in light of what the average Fresno, Kings, and Kern County resident would consider when deciding whether to use the proposed HST system. For those intending to travel between the Central Valley and the Los Angeles Area, most know that

³⁸ January 2, 2013 *Fresno Bee*, p. 1 (Source: Amtrak).

they can drive their own vehicle between these two areas in an average of two to three and a half hours, depending on where they live. To use the HST system, they would have to drive to the HST station in either Fresno or Bakersfield, which would take some time. They would have to park, buy a ticket and wait for the train. The 2012 Business Plan suggested average one-way fares between Kings/Tulare County and the Los Angeles Area of \$66 (2010\$).³⁹ Upon arrival at the terminal where they would de-train, most would not be where they want to go. They would need to hire a taxi, rent a car or take a complicated, slow-moving public transportation system to get to their final destination. All of this represents additional time and expense. If a family is traveling by automobile, they can leave their house and drive directly to their destination, and at substantially less expense. Also, the cost of driving is static. If they use the HST, they will have to buy multiple train tickets. It is difficult to imagine many instances where Valley travelers would choose HST over driving their own vehicle. In view of these on-the-ground realities, the Authority's ridership forecasts simply do not pass the smell test. Common sense tells you that they are fabricated and contrived. If the Authority is misleading everyone, then the State will be looking at significant operational subsidies, which Prop 1A forbids.

Mitigation of Greenhouse Gas Emissions.

The Authority's 2014 Business Plan claims that the project will result in "net zero greenhouse gas (GHG) emissions in construction."⁴⁰ Such a claim is both interesting and provocative, particularly in light of the enormous amount of construction equipment that will be used. This equipment will need to excavate, transport and compact perhaps as much as 14 million cubic yards of soil in constructing the rail beds (generally 90 plus miles of compacted berm fifty feet wide and ten feet high) and approximately 90 roadcrossings (long, high overpasses and long, deep underpasses). The project will also require massive amounts of concrete. The production and transportation of which will also result in substantial greenhouse gas emissions in the Central Valley, which is already in violation of Federal clean air requirements.

Moreover, much of the alignment travels through farmland and will result in the taking and removal of perhaps thousands of acres of walnut, almond and pistachio trees, fruit trees and grape vines. Tree orchards are populated with between 100 to 200 trees per acre, depending on spacing. Trees are known assets in greenhouse gas reduction; they remove CO₂ from the atmosphere and convert the same into complex carbohydrates such as sugars, starches, cellulose and lignin. Trees also trap particulates in the air in their canopy therefore reducing particulate pollution. When trees and vines are removed, they cease their valuable sequestration function. When they decay or are burned in cogeneration plants, the wood releases the sequestered carbon back to the atmosphere as CO₂. The Business Plan fails to describe exactly how many tons of

³⁹ Revised 2012 Business Plan, p. 5-12.

⁴⁰ 2014 Business Plan, p. 18.

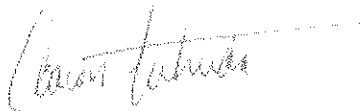
carbon dioxide equivalent this all represents and how the Authority proposes to offset the adverse GHG emissions that will be produced by construction of the project. If it plans on planting trees as mitigation, how many trees does it calculate will be needed to constitute a full offset? What kind of trees does it plan on planting, where will they come from, where will they be planted, who will plant them, who will take care of and irrigate them thereafter, and how much water will they require and where will the water come from? How will the Authority provide offset to impacts during construction when young trees take years to come into full maturity and provide their full air quality benefits. These are significant questions that the Authority's Business Plan needs to provide more specific answers.

Conclusion:

As can be seen from the above, there is a great deal that the Authority has failed to disclose to the public and to State Legislators in its Draft 2014 Business Plan – facts that represent the “inconvenient truths” and the “rest of the story.” These failures constitute flagrant violations of the requirements of section 185033 of the Public Utilities Code. Similar failures of omission and misrepresentation are what got the Authority into trouble with Judge Kenny, and are what led to the loss of its use of over \$3.0 billion in Prop 1A bond funds. We would hope that the Authority has learned a lesson and would not make that mistake again. We call upon it to promptly revise its Business Plan so as to fully and completely comply with all legal requirements.

This project is on the verge of becoming one of the biggest blunders in governmental planning and execution in modern history, perhaps even surpassing the legacy of the Big Dig in Boston and the Bay Bridge fiasco in Oakland. If construction begins before all needed funding is secured it is apt to end as an ignominious symbol of false promises and inept execution, and vilified as a great white elephant. We will hear things like: “The train to nowhere” or “Never in the history of the state has so much been spent for the benefit of so few.” Critics will condemn the false visions and failed promises of the Governor, and opponents will seize upon the Authority's dismal performance to thwart efforts to obtain more federal funding in the future.

Sincerely,

A handwritten signature in cursive script, appearing to read "Aaron Fukuda".

Aaron Fukuda, Co-Chair
California Citizens for High-Speed Rail Accountability

Cc:

Congressman David Valadao

Congressman Kevin McCarthy

Congressman Jeff Denham

Congressman Devin Nunes

State Senator Andy Vidak

State Senator Jim Nielson

Assemblyman Jim Patterson

APPENDIX

California Public Utilities Code.

185033. (a) The authority shall prepare, publish, adopt, and submit to the Legislature, not later than [May] 1, 2014, and every two years thereafter, a business plan. At least 60 days prior to the publication of the plan, the authority shall publish a draft business plan for public review and comment. The draft plan shall also be submitted to the Senate Committee on Transportation and Housing, the Assembly Committee on Transportation, the Senate Committee on Budget and Fiscal Review, and the Assembly Committee on Budget.

(b) (1) The business plan shall include, but need not be limited to, all of the following elements:

(A) A description of the type of service the authority is developing and the proposed chronology for the construction of the statewide high-speed rail system, and the estimated capital costs for each segment or combination of segments.

(B) A forecast of the expected patronage, service levels, and operating and maintenance costs for the Phase 1 corridor as identified in paragraph (2) of subdivision (b) of Section 2704.04 of the Streets and Highways Code and by each segment or combination of segments for which a project level environmental analysis is being prepared for Phase 1. The forecast shall assume a high, medium, and low level of patronage and a realistic operating planning scenario for each level of service.

(C) Alternative financial scenarios for different levels of service, based on the patronage forecast in subparagraph (B), and the operating break-even points for each alternative. Each scenario shall assume the terms of subparagraph (J) of paragraph (2) of subdivision (c) of Section 2704.08 of the Streets and Highways Code.

(D) The expected schedule for completing environmental review, and initiating and completing construction for each segment or combination of segments of Phase 1.

(E) An estimate and description of the total anticipated federal, state, local, and other funds the authority intends to access to fund the construction and operation of the system, and the level of confidence for obtaining each type of funding.

(F) Any written agreements with public or private entities to fund components of the high-speed rail system, including stations and terminals, and any impediments to the completion of the system.

(G) Alternative public-private development strategies for the implementation of Phase 1.

(H) A discussion of all reasonably foreseeable risks the project may encounter, including, but not limited to, risks associated with the project's finances, patronage, right-of-way acquisition, environmental clearances, construction, equipment, and technology, and other risks associated

with the project's development. The plan shall describe the authority's strategies, processes, or other actions it intends to utilize to manage those risks.

(2) To the extent feasible, the business plan should draw upon information and material developed according to other requirements, including, but not limited to, the preappropriation review process and the preexpenditure review process in the Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century pursuant to Section 2704.08 of the Streets and Highways Code. The authority shall hold at least one public hearing on the business plan and shall adopt the plan at a regularly scheduled meeting. When adopting the plan, the authority shall take into consideration comments from the public hearing and written comments that it receives in that regard, and any hearings that the Legislature may hold prior to adoption of the plan.

The High-Speed Rail Authority shall, as part of its [May] 1, 2014, Business Plan, include: a proposed approach for improving (a) demand projections, (b) operations and maintenance cost models, and (c) benefit- cost analysis as applied to future project decisions. The authority shall also submit a copy of the study by the *Union Internationale des Chemins de Fer* (the international union of railways) examining how the authority's estimated operating costs for high-speed rail compare to high-speed rail systems in other countries. These business plan components approved, as consistent with the criteria in this provision, by the Secretary of Business, Transportation and Housing shall be based on recommendations of the authority's peer review panel, advice from the domestic and international rail community, and external academic review.



P.O. Box 881 Hanford, CA 93232

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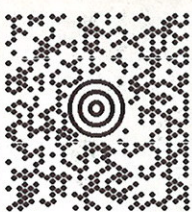
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1 OF 1

SHIP TO:

DRAFT 2014 BUSINESS PLAN
CALIFORNIA HIGH SPEED RAIL AUTHORITY
770 L ST STE 800
SACRAMENTO CA 95814-3359



CA 958 9-03



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Trx Ref No.: FROM CCHSRA
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413-4702
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1ZBE6256039045 IN440
GAS 06/30/15
FODUS HTP 13.11
US 9560

ATTN: DRAFT 2014 BUSINESS PLAN
CALIFORNIA HIGH-SPEED RAIL AUTHORITY
770 L STREET, SUITE 800
SACRAMENTO, CA 95814

2014 Business Plan RECORD DETAIL

Record Date :	4/8/2014
Submission Date :	4/8/2014
Affiliation Type :	Local Agency
Interest As :	Local Elected
Submission Method :	Letter
First Name :	Michael
Last Name :	Antonovich
Business/Organization :	Los Angeles County Board of Supervisors
City :	Los Angeles
County :	Los Angeles
Zip Code :	90012
Stakeholder Comments/Issues :	Please see attached letter. Also, please note that I serve as a Director for the Los Angeles County Metropolitan Transportation Authority, the Southern California Regional Rail Authority (Metrolink) and South Coast Air Quality Management District.
Draft Business Plan Comment Type :	
Attachments :	Letter to Dan Richard re CAHSR 2014 Business Plan.pdf (426 kb)



Board of Supervisors County of Los Angeles

MICHAEL D. ANTONOVICH
SUPERVISOR

April 8, 2014

Mr. Jeff Morales, Chief Executive Officer
California High-Speed Rail Authority
770 L Street, Suite 800
Sacramento, CA 95814

Re: Input into the CAHSR 2014 Business Plan

Dear Mr. Morales:

As Supervisor for Los Angeles County and immediate past Chairman of the Los Angeles County Metropolitan Transportation Authority (LACMTA), I continue to take great interest in the California High-speed Rail's potential to link Southern California to Northern California, to create a statewide integrated passenger rail network, and to develop Palmdale and the Antelope Valley as a high-speed rail hub with a future connection to Las Vegas via the High Desert Corridor.

With this letter I would like to reiterate, for the purposes of the 2014 Business Plan comment period, my support for the Authority's review of a tunnel oriented alternative between the Palmdale Transportation Center (PTC) and the San Fernando Valley Burbank/Bob Hope Airport station option.

I first wrote to encourage the Authority to take a look at this potentially more direct, faster, less costly, and less community intrusive route in October of 2013, due to the overall positive impact such an alternative could have on my district and its constituents.

I continue to encourage the Authority to explore this option, and well as options for bringing service on-line sooner through partnerships with other complementary local services like Metrolink.

I would also like to affirm my support for the Statewide Rail Modernization Program that supports critical connectivity projects in Southern California that provide immediate benefits to passengers once completed and that streamline the construction of high-speed rail in the longer term. Addressing the critical need for transportation improvements in Los Angeles County is vital to our economic well-being—and our future—and I believe these ideas are a win-win for the Authority and the communities I represent.

Sincerely,

A handwritten signature in black ink that reads "Mike Antonovich". The signature is fluid and cursive, with the first name "Mike" and last name "Antonovich" clearly legible.

MICHAEL D. ANTONOVICH
Supervisor

2014 Business Plan RECORD DETAIL

Record Date : 4/8/2014
Submission Date : 4/8/2014
Affiliation Type : Businesses and Organizations
Interest As : Businesses And Organizations
Submission Method : Letter
First Name : Philip
Last Name : Law

Business/Organization :

City :

County :

Zip Code : 00000

Stakeholder Comments/Issues : Good morning,

Please find attached a joint comment letter on the Draft 2014 Business Plan from the Los Angeles County Metropolitan Transportation Authority, Riverside County Transportation Commission, San Diego Association of Governments, and Southern California Association of Governments.

Philip Law
Manager, Transit/Rail
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS
818 West 7th Street, 12th Floor, Los Angeles, CA 90017
T: (213) 236-1841 | F: (213) 236-1963
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Don't miss SCAG's Regional Conference & General Assembly, May 1 - 2, 2014, at the Renaissance Esmeralda Resort & Spa in Indian Wells. Register now at www.scag.ca.gov/ga2014<<http://www.scag.ca.gov/ga2014>>.

Draft Business Plan Comment Type :

Attachments : FINAL Joint CEO ltr CHSRA 2014 BP - v2.pdf (174 kb)



April 7, 2014

Mr. Jeff Morales
Chief Executive Officer
California High-Speed Rail Authority
770 L Street, Suite 800
Sacramento, CA 95814

RE: Draft 2014 Business Plan – Comments

Dear Mr. Morales:

On behalf of the undersigned Southern California Regional Transportation Agencies, we thank you for the opportunity to comment on the Draft 2014 Business Plan (Draft Plan). Together, our agencies have been working cooperatively with the California High-Speed Rail Authority (CHSRA) to facilitate the development and successful implementation of high-speed rail (HSR) in Southern California, as embodied in two Memoranda of Understanding.

Signatories to the **Southern California Memorandum of Understanding (MOU)** are advancing the funding and implementation of early improvements to local passenger rail service and operations, while preparing designated HSR corridors for eventual HSR operation, to achieve region-wide systems integration of rail service in Southern California. This program of early investments in regional and local rail systems facilitates the “blended approach” to implementing HSR service through coordination of increased interregional connectivity of the existing transportation systems and is a significant component of the rail modernization priority of the state.

Signatories to the **Southern California Inland Corridor Group (SoCal ICG) Partnership MOU** are supporting the preparation of technical studies for the Phase 2 Los Angeles to San Diego via Inland Empire HSR corridor. SB 1029 included \$56 million for this section. However, the CHSRA only recently awarded a \$2 million contract for corridor work during the next two years. We request that the CHSRA complete the preliminary engineering and environmental tasks and advance this section should additional funding become available and new opportunities arise.

Individual undersigned agencies support the Governor’s proposed FY15 Cap and Trade funding allocation for HSR and have transmitted a support letter to the Assembly Budget Subcommittee No. 3 on Resources and Transportation. Agencies have also transmitted a similar support letter for the Senate hearing on April 3, 2014. As we continue to work with



the CHSRA to ensure that the HSR system will address local, regional and state needs and priorities, we collectively offer the following comments on the Draft Plan.

- We support the Draft 2014 Business Plan and appreciate the consistency with, and validation of, the previous 2012 Business Plan. We welcome the documented progress that CHSRA has made in advancing the Central Valley segment to construction and moving forward on the planning and environmental studies for the remaining segments. We also commend the CHSRA for taking the necessary steps recommended by the Legislative Peer Review Group, the United States Government Accountability Office, and others, to develop a comprehensive risk management program and incorporate a rigorous quantitative risk analysis into the Draft Plan, in order to better quantify and understand the risks associated with the cost estimates and ridership and revenue forecasts. We urge the CHSRA to continue to maintain transparency and open lines of communication with its partner transportation agencies, local elected leadership, and the general public, as it addresses these risks and challenges.
- We continue to support the state's efforts to plan, design, and construct HSR service throughout the state and in Southern California. We will continue to work cooperatively with the CHSRA and partner transportation agencies to facilitate the advancement of project level Environmental Impact Reports/Environmental Impact Statements (EIR/EIS) and implementation of the HSR corridors, as well as implementation of early investments in connecting services.
- The Draft Plan acknowledges the importance of the bookend and connectivity projects that will strengthen and improve existing rail networks in the near term and yield early and demonstrable mobility benefits in Southern California, while enhancing the HSR system's utility by providing seamless connections with local and regional rail systems. Making these early investments in Southern California provides the opportunity for the CHSRA to meet many of its goals, objectives, and mandates in advance of full implementation of the statewide HSR system. To that end, the Draft Plan discussion should be expanded to acknowledge the Southern California MOU and identify the participating agencies, highlight progress to date on advancement of the MOU projects, and discuss the CHSRA's commitment to securing the necessary funds to implement the MOU projects.

Furthermore, discussion should be given to advance investment projects that will result in a change to passenger rail operations that reduces greenhouse gas emissions (GHG) and provides a significant cost benefit over existing infrastructure. The number one priority project in Southern California—the Southern California Regional Interconnector Project (SCRIP)—is indicative of the value that these advance investments have towards achieving our environmental goals. This project will reduce locomotive idling times at Los Angeles Union Station by approximately 25 hours a day.



This will reduce greenhouse gas emissions by 44% and reduce the overall cost of operations through fuel and labor savings. Projects like this are an important part of the success that rail modernization brings to the region.

- We appreciate the complex challenges that come along with building large infrastructure projects such as HSR, and we support the CHSRA's financial plan and ongoing efforts to secure funding to implement HSR. The Draft Plan identifies potential uncommitted funding sources, including Cap and Trade revenue and a dedicated federal trust fund for intercity and high-speed rail. We expect the state budgetary process and successful passage of the federal transportation reauthorization bill to help bring some clarity to the matter.

As the CHSRA works to finalize the 2014 Business Plan and submit it to the state legislature in a timely manner, we recognize that upcoming efforts at the state and federal levels will have the potential to substantially affect the HSR project and Business Plan moving forward, including the state's Network Integration Strategic Service Plan and federal transportation reauthorization. Therefore, we offer the following suggestions and clarifications for consideration when the CHSRA begins the 2016 Business Plan update.

- To the extent possible, revisions to the Draft Plan regarding Phase 2 should be addressed. For example, the Los Angeles to San Diego corridor could be added to Exhibit 1.1 in a similar way that it is listed in Exhibit 1.2 and included on page 14. Additionally, the SB 1029 call-out box on page 21 could be expanded to show the breakdown of the \$252 million for Phase 1 and 2; SB 1029 identifies \$56 million for Los Angeles to San Diego.
- For the 2016 update, we respectfully request further discussion of Phase 2, including the SoCal ICG Partnership MOU and the agencies involved. We would appreciate clarification in terms of cost and schedule for planning, environmental, and construction activities, and Phase 2 next milestones. We also request that Phase 2 be included in future ridership and revenue models. In the Draft Plan, the CHSRA's revised ridership and revenue model indicates a significant increase in the number of shorter distance trips. The Los Angeles to San Diego section has a great potential for short range trips within the currently underserved markets of Inland Empire to Los Angeles and Inland Empire to San Diego sections that are not being captured in the current model.
- We encourage the CHSRA to continue working with our agencies to discuss and evaluate access to and from future HSR stations by mode, such as auto, transit, and connecting Metrolink feeder service. These factors, as well as parking supply and pricing, are important variables in determining HSR ridership and revenue.



- Land values and uses around future HSR stations are expected to change due to the improvements in accessibility and changing employment and housing patterns. Transit-oriented development around HSR stations provides a great opportunity to reduce vehicle miles traveled, air pollution and greenhouse gases (GHGs), and help support state-mandated reductions in GHGs. The possibility of value capture by various mechanisms also can help to fund infrastructure. We request the CHSRA to consider and analyze land use impacts and land value impacts in the 2016 Business Plan update.

Thank you for your consideration of our comments on the Draft 2014 Business Plan. We appreciate the work that the CHSRA has completed to date, and we look forward to a continued and productive partnership in implementing the MOU early investment projects in Southern California as a means of bringing the HSR experience to our region in advance of the completion of the overall statewide HSR system.

Sincerely,

Arthur T. Leahy
Chief Executive Officer,
Los Angeles County Metropolitan
Transportation Authority

Anne Mayer
Executive Director,
Riverside County Transportation
Commission

Gary L. Gallegos
Executive Director,
San Diego Association of Governments

Hasan Ikhrata
Executive Director,
Southern California Association of
Governments

Michael P. DePallo
Chief Executive Officer,
Metrolink

2014 Business Plan RECORD DETAIL

Record Date : 4/8/2014
Submission Date : 4/8/2014
Affiliation Type : Individual
Interest As : Individual
Submission Method : Letter
First Name : Shelli
Last Name : Andranigian
Business/Organization :
City :
County :
Zip Code : 00000
Stakeholder Comments/Issues :

Dear California High-Speed Rail Authority,

Good afternoon. Attached please find a PDF copy of my comment letter re: the Draft 2014 Business Plan.

A mailed copy with my signature will be sent today.

Thank you.

Sincerely,

Shelli Andranigian

Fresno County
[REDACTED]

Draft Business Plan Comment Type :

Attachments : Corrected2014 DRAFT Business Plan Comment Letter.pdf (67 kb)

April 8, 2014

Attn: Draft 2014 Business Plan

Attn: Chairman Dan Richard

California High-Speed Rail Authority

770 L. Street, Suite 800

Sacramento, CA 95814

**A 21st Century Medicine Show also known
as California's High-Speed Rail Project**

Dear Chairman Richard,

Nearly six (6) months ago, I delivered a speech during public comment to you and the members of the California High-Speed Rail Authority (CHSRA) Board in Los Angeles, California.

I am referencing that October 14, 2013 speech today because it made sense then and makes even more sense now about the actual "business plan" at hand by the CHSRA. The 101 page "Connecting California Draft 2014 Business Plan" which was issued earlier this year by the Authority is not user-friendly. The document is unreadable and not meant for public consumption. Perhaps that was the intent.

Thus, this comment letter on the "Connecting California Draft 2014 Business Plan" is titled "A 21st Century Medicine Show also known as California's High-Speed Rail Project." The name is taken from a memorable line in the speech, much like how TV sitcoms are referenced:

“Good morning/ Good afternoon. My name is Shelli Andranigian.

Since we’re near the entertainment capitol of the world (Hollywood), I am here to talk today about the BIG event at hand: A 21st Century Medicine show also known as California’s High-Speed Rail Project.

This show isn’t just about the land, it’s foremost about the money.

My perspective is it’s also all about the intent (in this case, the lack of it), by the California High Speed Rail Authority (CHSRA) to actually build and complete an operative high-speed rail system. From where

I’m seated, the project is nothing but an expensive shell game that’s approaching a billion dollars with very little to show for thus far.

There is not enough money in hand to guarantee the completed construction and operation of the California High-Speed Rail, yet there is just enough money to guarantee the destruction of homes, businesses and lives along the proposed routes in the Central Valley.

I find it odd that we are here at a public board meeting to be updated on what is happening with the project, and in particular the Merced- Fresno-Bakersfield section which is the backbone of the project and the first that must meet tight federal deadlines. Yet there is nothing related to the initial operating segments (IOS) on the agenda. Is there really nothing to discuss about the initial (first) construction segment (ICS) or the status of the remainder of the IOS south of Fresno? Don’t you want to know the status of the Fresno-Bakersfield Environmental Impact Report (EIR)? I know we sure do! Does the staff have no motivation to brief you? Has no progress occurred in the last month? I believe you are paying these consultants, yet there are no updates. If you feel you are well informed about what is going on, then how is the information getting to you and not also to us? The point of these public board meetings is so that the public has access to the same information as the board. It is the reason why there are Bagley-Keene open meeting laws. We would request that you keep to the letter and the spirit of these open meeting laws and have those discussions on the progress of the ICS, IOS and active EIR’s in full public view.

Your finances are also being hidden from public view. We, the people of California, deserve an accounting for how you have spent our state and federal tax dollars, especially with no land acquired nor tracks laid. I need to see the proof of funding for this rail system. What happens when you run out of the funds? Will everyone affiliated with the project be moving onto the next lucrative consulting contract for another Big Dig or Golden State boondoggle... leaving those of us in the proposed paths of the high-speed train in disarray and destruction?!!

The California High-Speed Rail project is nothing but a modern day Medicine show. I don't believe there will ever be a rail system because there are no plans to finish the current project.

The only thing I believe you can guarantee those of us in the Central Valley is more unemployment by displacing those who farm and have businesses along the proposed routes. I guess if you want a guarantee, then buy a toaster.

In closing, I want you to know I love trains. It's so disappointing for me to watch this project being mishandled, thus tarnishing what could have been something special for future generations of Californians and those who visit our wonderful Golden State!"

Mr. Richard, after the meeting a gentleman came up to me who was an engineer and although he was still pro the project he told me he agreed with some of what I had to say. He told me via phone later that the California High-Speed Rail is an engineering project, but that lawyers and administrators were running things. I don't know if he ever had a chance to read the "Connecting California Draft 2014 Business Plan."

Looking back, it also made sense that the Authority chose to have their monthly board meeting on the Columbus Day holiday to avoid media scrutiny. News staffs are lighter on those days. There were intense and questioning comments at that meeting, including those who had previously only spoken highly of the project. It was not a love fest (which was not the case when the Authority had their last meeting in the same location (and LA) in January 2012).

In the six (6) months since that October day, those of us in the pathway have found out about a number of shenanigans going on behind-the-scenes (some after the fact) again, which was probably the intent.

Two glaring examples are: 1) Submitting a Surface Transportation Board (STB) request last September for a complete exemption of the Fresno to Bakersfield section without letting anyone know. We found out after when the exemption was denied. 2) Asking for a premature review from the U.S. Army Corps of Engineers. The proposed path of the California High-Speed Rail would cross U.S. Waterways next to and near our Home Place. The CAHSR project is environmentally damaging and not green.

One has to question, does the Authority not believe in being above-board when conducting their business? Their actions adversely affect every Californian and every infrastructure project in the future. Is this the reason why the "Connecting California Draft 2014 Business Plan" is so unclear for the same reasons?

Page 4

Last month I took my nephew to a favorite place to purchase trains. It was not an inexpensive place to shop, nor was our purchase. However, after buying the bridge, multiple Thomas trains, utility vehicles, etc. for him and his little brother I told another family member....."Well, at least I know our purchase today will be put to good use." And also enjoyed. The same can't be said for future generations of Californians (including said nephews' children) with the Authority spending their State and Federal tax dollars on "A 21st Century Medicine Show also known as California's High-Speed Rail Project." Thank you.

Sincerely,

Shelli Andranigian

Fresno County

Mailing address:

[REDACTED]

[REDACTED]

Cc: Ryan Jacobsen, Fresno County Farm Bureau; Diane Friend, Kings County Farm Bureau; Fresno County Board of Supervisors, Kings County Board of Supervisors, Citizens for California High Speed Rail Accountability (CCHSRA)

2014 Business Plan RECORD DETAIL

Record Date :	4/8/2014
Submission Date :	4/8/2014
Affiliation Type :	Individual
Interest As :	Businesses And Organizations
Submission Method :	Email
First Name :	Emily
Last Name :	Burstein
Business/Organization :	CALTRANS
City :	
County :	
Zip Code :	00000
Stakeholder Comments/Issues :	
Draft Business Plan Comment Type :	
Attachments :	Comments on 2014 California High Speed Rail Authority Business Plan4-8-14.pdf (89 kb)

Caltrans Division of Transportation Planning

Comments on Draft 2014 California High Speed Rail Authority Business Plan

Throughout the Draft 2014 California High Speed Rail Authority Business (Plan), there is little discussion or illustration of the Blended Service concept, and how all passenger rail elements are integrated into a statewide network. Specifically missing are any maps or descriptions of the Los Angeles Basin integration with Metrolink, linkage with Caltrain in the San Jose-San Francisco corridor, or use of Altamont Corridor Express infrastructure. It would be helpful to see how high speed rail would integrate on the commuter services rights-of-way and the impacts or unique situations that would prevail. In addition, under *Started Work on First Segment of High-Speed Rail* there is only a slight description on page 22 of potential integration with the state-supported San Joaquin service between Merced and Bakersfield.

Map on page 14 is confusing, and contains too much information. It would be clearer to have two additional maps illustrating: 1) the Bay to Basin segment and 2) illustrating the Phase 1 Blended and Phase Two segments.

Page 21: In the section titled *Received a Record of Decision from the Federal Railroad Administration...* it stated a Record of Decision was issued approving the “Hybrid Alternative” alignment for the Merced to Fresno project section. However, there is no discussion or description of what the “Hybrid Alternative” is.

Page 21: Under the section titled *Received Approval from the Surface Transportation Board...* it is noted that the STB authorized the Authority to begin construction on the Merced to Fresno project section and exempted the Authority from its full application process for this section. What specifically does this exemption refer to?

Page 22: Under the section titled *Started Work on the First Segment of High Speed Rail* there is little description of the possible interim service with the Amtrak San Joaquin trains. There should be a fuller description of the potential combined service and how it could be integrated.

Pages 10 and 25: The use of the Monte Carlo simulation technique is first mentioned on page 10, and is used in a number of places throughout the Plan. However, it isn’t until page 25 that there is an explanation of this technique and its methodology. The description should be placed neared to the first mention in the Plan.

Page 34: Exhibit 3.2 *Initial Operating Section*. The costs associated with the Initial Construction Segment should be broken out of costs for the Initial Operating Section in order to give a clearer idea of actual cost per segment.

Under *Presentation of Capital Costs* on page 34 it states that there is a contingency of between 10 and 25 percent included in each infrastructure-related cost category, as well as a five percent “Unallocated Contingency” category. Exhibits 3.2, 3.3, and 3.4 on pp. 34 and 35 lists the “Unallocated Contingency” category but there is no dollar amount shown for the variance of 10 to 25 percent for the infrastructure-related cost category.

In Sections 4 and 5, including pp. 43, 45, 51 and 55, there is commentary on the potential of ancillary revenue being raised through a number of activities including on-board sales, parking, advertising, etc. within an estimated range of 3 to 30 percent of total revenue. However, there is no discussion of ancillary revenue sharing with local agencies which may have funded a portion of development costs, especially for stations. Conversely, there is no discussion of state receiving a share of ancillary funds to recoup some portion of development costs. Is it assumed that all ancillary revenue will go to the operator of the HSR service?

Page 58: In *Benefit Cost Analysis* it notes the disbenefit of GHG emissions during construction. However on page 18 under *The Authority is Committed to Sustainable Operations...* it states “this includes a commitment to use renewable energy for powering the system, net zero greenhouse (GHG) emissions in construction...”. These statements in conjunction with each other are confusing.

Minor Comments

On page 21, in the box *Work is Underway* it states that an RFQ was issued...”for 60 miles from Fresno south to 1 mile north of the Tulare-Kern County line near Bakersfield.” That location is at least 30 miles north of Bakersfield and 60 miles from Fresno, approximately two-thirds the distance between the two points. It is not “near Bakersfield.”

On page 70 in *Railroad Agreements* and on page 74 in *Acronyms and Abbreviations* the BNSF Railway is labeled “Burlington Northern-Santa Fe Railway.” It is no longer Burlington Northern-Santa Fe Railway, it is BNSF Railway.

Page 18 under *Thousands of Jobs Will Be Created...* it states “thousands of jobs created with first segment...” How many thousands?; Can this statement be better quantified?

2014 Business Plan RECORD DETAIL

Record Date : 4/8/2014
Submission Date : 4/7/2014
Affiliation Type : Individual
Interest As : Businesses And Organizations
Submission Method : Letter
First Name : Dan
Last Name : Feger
Business/Organization : Burbank-Glendale-Pasadena Airport Authority
City : Burbank
County :
Zip Code : 91505
Stakeholder Comments/Issues :
Draft Business Plan Comment Type :
Attachments : Burbank-Glendale-Pasadena-Airport-Authority.BP.pdf (568 kb)
Envelope.pdf (952 kb)



April 7, 2014

Jeff Morales
Chief Executive Officer
California High Speed Rail Authority
777 L Street, Suite 800
Sacramento, CA 95814

Attention: Draft 2014 CHSRA Business Plan

Dear Mr. Morales:

The Burbank-Glendale-Pasadena Airport Authority ("BGPAA") is pleased to comment on the Draft 2014 Business Plan issued by the California High Speed Rail Authority ("CHSRA").

For the last few years BGPAA has been monitoring closely development of the California high-speed rail program. We have been particularly interested in the priority given to the "blended systems approach" delineated in the 2012 revised Business Plan adopted by the CHSRA. The Draft 2014 Business Plan places a similar priority on this common-sense approach to developing a modern statewide rail program serving key metropolitan areas of the State. The CHSRA's Draft Business Plan includes development of a statewide-integrated rail program "Connecting California," including the potential for supporting connectivity of various transportation modes. Let me add, the recently approved California State Rail Plan, which included the high-speed rail program, observed, "California's rail system provides important connections to airports throughout the State." The BGPAA, in cooperation with our regional partners has been taking actions to improve intermodal connectivity, concurrent with development of the CHSRA's high-speed rail program.

In recent months, BGPAA has been engaged with the City of Burbank and our regional transportation partners in development of comprehensive ground access program and Transit Oriented Development (TOD) planning program. We have also worked cooperatively with the LA Metro and Metrolink in development and implementation of a new Metrolink station at Hollywood Way, along the Antelope Valley line. Construction of the station is an example of an early action improvement identified in the Antelope Valley Line Corridor Strategic Plan, supporting the CHSRA's blended approach.

Jeff Morales
California High Speed Rail Authority
April 7, 2014
Page 2

In the future BGPAA will continue to work with our regional partners and the CHSRA on other constructive actions to improve ground access at the Burbank Bob Hope Airport and improve the regional transportation system. We are committed to providing a wide range of transportation choices and alternatives for our passengers, facilitating the "plane-to-train" connection, and at the same time reducing congestions in the Burbank area.

Let me add that BGPAA has greatly benefited from the high level of professionalism and communication demonstrated by Ms. Michelle Boehm, Southern California Regional Director. We look forward in the future to continuing the close working relationship with Ms. Boehm and the CHSRA.

Lastly, we urge the CHSRA to continue the collaborative approach with your regional partners in the Santa Clarita and San Fernando Valleys.

Sincerely,

A handwritten signature in cursive script, appearing to read "Dan Feger", written in dark ink.

Dan Feger
Executive Director

cc. Commissioners, BGPAA
Board of Directors, CHSRA
Michelle Boehm, CHSRA
Mike Gatto, California State Assemblymember
Mark Scott, City of Burbank, City Manager
Don Sepulveda, LA Metro



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Sender's Name Dan Fejer
Phone 818 840-8840

Company BURBANK A/P AUTHORITY

Address 2627 N HOLLYWOOD WAY FL 2

City BURBANK State CA ZIP 91505-5017

2 Your Internal Billing Reference

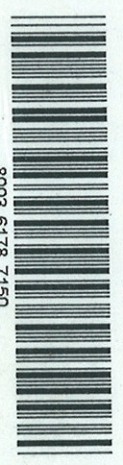
3 To Recipients Name
Attn: 2014 Business Plan 916 320-1541

Company Calif. High Speed Rail Authority

Address 7777 L Street #800
We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address Use this line for the HOLD location address or for continuation of your shipping address.

City Sacramento State CA ZIP 95814



8003 6178 7150

0452644414

FedEx TRK# 8003 6178 7150
WD BLUA
TUE - 08 APR AA
STANDARD OVERNIGHT
95814 CA-US SMF
FID 379476 07APR14 BUR4 51AC1/7809/650D

Form ID No. 0215

4 Express Package Service
NOTE: Service order has changed. Please select carefully.

Next Business Day

☐ FedEx First Overnight
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SCL (SCL) Delivery is selected.

☐ FedEx Priority Overnight
Next business morning. * Friday shipments will be delivered on Monday unless SAT/UNDAY Delivery is selected.

☒ FedEx Standard Overnight
Next business afternoon. * Saturday Delivery NOT available.

5 Packaging *Declared value limit \$500.
☐ FedEx Envelope* ☐ FedEx Pak*

6 Special Handling and Delivery Signal
☐ SATURDAY Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

☐ No Signature Required
Package may be left without obtaining a signature for delivery.

☐ Direct Signature
Someone at recipient's address may sign for delivery. Fee applies.

☐ Indirect Signature
If no one is available at recipient's address, someone at a neighboring residential delivery only. Fee applies.

Does this shipment contain dangerous goods?
One box must be checked.
☐ No ☐ Yes
Shipper's Declaration ☐ Shipper's Declaration
Dangerous goods (including dry ice) cannot be shipped in FedEx packaging unless printed on the FedEx Express Ship Label.

7 Payment Bill to:
Sender ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

Total Packages Total Weight
0.5 lbs.

RT 226 4 A
FZ 229 7150 04.08

2014 Business Plan RECORD DETAIL

Record Date :	4/8/2014
Submission Date :	4/8/2014
Affiliation Type :	Individual
Interest As :	Individual
Submission Method :	Project Email
First Name :	Evan
Last Name :	Porteus
Business/Organization :	
City :	
County :	
Zip Code :	00000

Stakeholder Comments/Issues : Greetings!

I was asked by a colleague here at the Stanford Business School to volunteer my time to read portions of the Draft 2014 Business Plan that referred to Monte Carlo simulation results.

I am a retired faculty member at the Stanford Business School and I have taught classes on statistics along with many other courses over the years. Crystal Ball, the add-on software to Excel that was cited as the tool being used to conduct the Monte Carlo simulations for the Draft 2014 Business Plan, was an important component of the material covered in two of those statistics classes, entitled *Data and Decisions.*

I have not been able to read all of the Draft 2014 Business Plan and its technical supporting documents. Hence, I cannot be complete or comprehensive in my comments. However, I do have two comments and recommendations that I would like to make, so that the Draft 2014 Business Plan can be improved before it becomes final.

For convenience, I will refer to the following three documents using the following abbreviations:

BP Connecting California Draft 2014 Business Plan
S4 2014 Business Plan Ridership and Revenue Technical Memorandum
S5 Operations and Maintenance Cost Model Documentation

For example, I use the abbreviation BP to refer to the Connecting California Draft 2014 Business Plan.

Here are my two comments:

(1) The documents are not transparent. I will give four examples to support this point.

Example 1. Exhibits 5.1 - 5.3 in BP (pp. 49-50) display numbers that I cannot find in S5. The low 2025 year O&M cost in Exhibit 5.3 is \$438 MM (million). The low total IOS O&M in Table 35 (p 54 in S5) is \$10,237 MM, but there is no breakout of that total into yearly figures, showing how the \$438 MM is derived.

Example 2. Where does the \$10,237 MM in Table 35 just mentioned come from?

It is described as an input parameter, but I can't find how it was derived.

Example 3. Where does the \$16,067 MM that is the basis of the \$16,870 MM and \$21,529 MM in the same table, come from? (The \$16,870 is described as "Medium w/ contingency)*1.05" which means "Medium w/ contingency must equal \$16,067 because $16,870 = 16,067 * 1.05$. Similarly, the \$ 21,529 is described as "Medium w/ contingency)*1.34" which fits with the previous sentence: $21,529 = 16,067 * 1.34$.)

Example 4. In Figure 4 (p 52 in S5), where did the three boxed and arrowed numbers (19680, 24653, and 29164) come from? If they came from the 2012 report, and 24,653 is the previous base case, then where is the explanation for why the simulated O&M costs shown in this Figure have such a lower mean than the old base case? If one simulates using the old cost estimates, one will not get a much lower mean.

Recommendation 1. Revise the presentation so that it is clear where each quantity (appearing in the document) comes from.

(2) The analysis is inconsistent in its handling of correlations.

In the Monte Carlo simulations that I looked at, the quantities simulated were assumed to be statistically independent. But in Section 6 of BP (pp 51-52), the scenarios for revenue and O&M costs were assumed to be perfectly positively correlated. That is, if the revenues were low, then so were the O&M costs. If one assumes statistical independence for this part of the analysis, too, one would need to recognize the possibility of low or medium revenue along with high O&M costs, as well as high revenue along with low or medium O&M costs. It is not intellectually honest to assume that (a) different O&M cost categories in the same year and O&M costs in the same category but in different years are statistically independent, (b) ridership in different routes within a year and revenues between years are statistically independent, and, in addition, (c) total O&M costs in a year are perfectly correlated with total revenues in that year.

Recommendation 2. Select one of the following two options.

(I) Enrich the analysis in Section 6 (Financial Analysis and Funding) of BP to display outcomes that involve mismatches of revenues and costs. In particular, it should include, among others, the outcomes of (i) high revenue along with low O&M costs and (ii) low revenue along with high O&M cost, along with the likelihood of each outcome. This should probably be a decision tree (contingency) analysis. For example, if ridership is higher than expected in the current month, this indicates that ridership is likely to be higher than expected in the following month, so increasing staffing (and O&M costs) would be appropriate to give acceptable levels of service. This model will likely lead to different results in the break-even analysis.

(II) Do something else in the analysis to avoid being intellectually dishonest, as described above.

Sincerely,
Evan L. Porteus

**Draft Business Plan Comment
Type :**

2014 Business Plan RECORD DETAIL

Record Date : 4/9/2014
Submission Date : 4/7/2014
Affiliation Type : Individual
Interest As : Individual
Submission Method : Project Email
First Name : Carol
Last Name : Bender
Business/Organization :

City :

County :

Zip Code : 00000

Stakeholder Comments/Issues :

Please acknowledge receipt of comment attached to this e-mail. I will gladly resend it if there are any problems with its transmission.
Best regards,
Carol Bender

**Draft Business Plan Comment
Type :**

Attachments : Comments Draft 2014 Business Plan April 7.pdf (63 kb)

April 7, 2014

RE: Comments 2014 Draft Business Plan

Having reviewed the comments already submitted by the public sector, I would like to emphasize that the comments were overwhelmingly in opposition to the HSR project as proposed. Additionally, comments were overwhelmingly critical of the current 2014 Draft Business Plan.

The Authority seems to think that this new Business Plan is a vast improvement over the last one which was highly criticized. The data and assumptions used in prior Business Plans were often subjective at best.

This new Business Plan was touted as being more accurate with regard to estimates in maintenance and operational costs (O&M), funding, ridership and other crucial plan aspects. Instead, we are presented with yet another flawed plan.

There is really no new concrete plan for funding. We are seemingly left suspended on tender hooks waiting to see if our legislature will consider using Cap and Trade Funds for this project. If any of our legislators have a brain in their heads, they will quickly vote "No". Cap and Trade Funds were intended to be used on projects producing immediate environmental benefits. It has been well documented that the HSR project will contribute ADDITIONAL greenhouse gas emissions during the construction phase these next few decades. Given that the HSR Authority seems to feel that we will still benefit from an improved Amtrak system EVEN IF the ICS never connects to the LA Basin or to San Francisco, one has to ask : Why would we add to the already out of control air pollution problem in the Central Valley, knowing that there is a distinct possibility that the full IOS will never be completed ? This is blatantly irresponsible. Even considering Cap and Trade funding as a resource is shameful.

There is no source of private funding. There is no source of ongoing federal funding. All future funding at this point in time will come out of the General Fund. This is not what voters approved through Proposition 1A. Voters did not approve a "blended system" either. The plan has morphed itself into something hardly recognizable when compared to the text of Proposition 1A. That said, the new "plan" must be put before the voters.

When the 2012 Business Plan was criticized, the authors of the new 2014 plan decided to utilize the "Monte Carlo Methodology" which as a tool, is easily manipulated. It relies on the assumption that all of the numbers and information submitted into the formula are correct. These numbers, facts and assumptions are still widely challenged by experts.

The UIC Peer Review that is mentioned in the plan is quoted as stating, "The experts did not find any fatal flaws on the O&M (operations and maintenance) cost process". What the plan did not emphasize, is that the UIC report listed concerns:

-that the technology to be used has not yet been decided—especially in the areas of track systems and rolling stock to meet the 220 mph performance measure

-Translating the range of (European) infrastructure maintenance reference values into the U.S HSR project requires further expertise once the project design and the technology are fully determined.

-It should also be mentioned that the experts did not review the ridership process and did not have to produce any comments on the ridership results. The Business Plan figures assume high passenger loads on their railcars which are likely unrealistic, when compared to European ridership models.

The Authority's cost estimates for the maintenance of its infrastructure still don't seem to reflect the full magnitude of the wear and tear of a 220 mph system. The high cost of high speed corresponds to the ideas UIC had to lower costs by running the trains that aren't directly competing with airlines (all but the the nonstop Bay Area to LA trains) at a lower speed. The costs from wear and tear of stopping and starting a 220 mph train through the course of multiple route stops would be enormous. This is not accurately reflected in the Business Plan. Again, given that a specific train set or track system has not been determined severely limits the "facts" or "estimates" utilized in the Business Plan....and in the "Monte Carlo Methodology" model.

There is also a confusing section in the Business Plan that discusses bus connections. The report states that when (and if..) the IOS is completed, they plan to subsidize the bus connections beyond the endpoints "during the initial stages of implementation". In order to keep ticket prices down, and be competitive with air travel, they suggest that ticket prices are adjusted allowing incremental fares for a bus connection. For example, the fare for a bus connection to Monterey.. is set at \$1.18. A bus connection fare to "Far North" or Sacramento would be \$ 9.40 (140miles). A bus connection fare to the LA Basin is set at \$1.18. These fares seem extremely low, especially as O&M of the number of buses they propose would be far higher than what fares could possibly bring in. Additionally, they don't define the parameter of "initial stages of implementation". Does that mean the time period it will take until private operators take over? Does that mean (if no private operator shows up), that the entire time period extends until the next section is actually built? The one-seat ride from LA to San Francisco that voters thought they would be getting has turned into a multiple transfer, extended length trip that far exceeds the 2 hr. 40 minute travel time promised.

Note that the Business Plan itself doesn't even mention connector buses.....that information is in the supportive reports. After doing my own number crunching, I find that the Business Plan takes liberties with rounding up numbers with regard to ridership capacity--skewing trip numbers and overall ridership. I find this unacceptable.

The 2014 Business Plan minimizes the risks (although it commits a general paragraph or 2 to each). If this were a comprehensive plan, the risks would be clearly outlined and analyzed.

The Business Plan is inadequate. The current proposed project plan is not what the voters chose.

In all good conscience, the Authority must stop the current course and let the Federal funding revert back to another more appropriate project. It makes more sense to promote rail services that improve the current Amtrak system by subsidizing additional track and investing in appropriate grade separations. I think that Mr. Paul Dyson said it well in his letter,

“Bridging the gap between Los Angeles and Bakersfield is truly a project which on its own represents independent utility, regardless of whether there is additional investment in High Speed Rail. Building a new railroad to connect Los Angeles with Bakersfield is of itself a “mega project” and one which will consume all the resources currently identified and probably more. Consideration should be given to all alternatives, including a base tunnel in a direct line from Castaic to Grapevine, as well as the current extended route via Palmdale. Indeed, there needs to be a thorough cost-benefit analysis of the best way to link the state intercity routes as well as to provide modern passenger rail service to the Antelope Valley.

To end this letter, I would like to also say that it is in the best interest of all Californians to halt all construction plans until the court systems have ruled on the current lawsuits. Moving forward at this time, knowing that the courts have already ruled against the HSRA on several counts, is blatantly irresponsible and a waste of taxpayer dollars. Repeatedly filing for exemptions, rather than complying with the rulings/ court system is quite frankly, embarrassing.

Thank you for the opportunity to submit comments on the 2014 Draft Business Plan.

Carol Bender

[REDACTED]

Bakersfield CA 93314

2014 Business Plan RECORD DETAIL

Record Date :	4/9/2014
Submission Date :	4/8/2014
Affiliation Type :	Individual
Interest As :	Businesses And Organizations
Submission Method :	Project Email
First Name :	Casey
Last Name :	Fromson
Business/Organization :	CALTRAIN
City :	
County :	
Zip Code :	00000

Stakeholder Comments/Issues : Please find below, comments pertaining to the Revised 2014 High Speed Rail Business Plan.

* Page 20: The document references the anticipated reductions in Greenhouse Gases (GHGs) from the Caltrain Peninsula Corridor Electrification Project (PCEP). The PCEP Draft Environmental Impact Report (DEIR) was released on February 28, 2014 and states that the Project would reduce 68,000 Metric Tons of CO2 equivalent by 2020, which is larger than the amount stated in the draft 2014 Business Plan. The PCEP DEIR GHG number includes emissions associated with the reduced number of Vehicle Miles Travelled (VMT) due to increased service. If the emissions reductions related to VMT reduction is removed, the number is 24,000 Metric Tons of CO2 equivalent.

* Page 21 & 24: Senate Bill (SB) 1029 allocated \$705 million to help fund the \$1.45 billion Caltrain Modernization Program. The 2012 MOU between CHSRA, Caltrain, and seven other regional funding partners as well as SB 557, further solidifies the commitments to this funding plan. The draft 2014 Business Plan references two different numbers and it may make sense to reference the \$705 million in both places.

* Page 24: For more specificity, the Peninsula Corridor Electrification Project Draft Environmental Impact Report was released on February 28, 2014.

* Page 24: The Advanced Signal System, currently being installed as part of the Caltrain Modernization Program, not only includes Positive Train Control (PTC) but also Communications Based Overlay Signal System (CBOSS) which provides additional capabilities to enable increased safety and operating performance for Caltrain and future high-speed rail service. For more information about the CBOSS PTC project:
www.caltrain.com/CBOSSPTC<<http://www.caltrain.com/CBOSSPTC>>

* Page 77, footnote 11: Electrification of the Caltrain Corridor is scheduled for 2019, not 2020. Page 16, footnote 11 correctly references the 2019 date.

Finally, the PCEP DEIR analyzed 80 HSR revenue trains on the Caltrain Corridor, per the description provided in the 2012 CHSRA Business Plan. In the draft 2014 Business Plan, there are 106 daily "revenue to revenue" trains noted for the Caltrain Corridor. We would like to understand better the assumptions for developing the revenue train number in draft 2014 Business Plan.

If you have any questions, please don't hesitate to email or call.

Thank you,

Casey Fromson
Office of Community and Government Affairs
Caltrain | SamTrans | Transportation Authority
1250 San Carlos Ave.
San Carlos, CA 94070-1306
Direct: 650.508.6493
www.smctd.com<<http://www.smctd.com>>

Draft Business Plan Comment
Type :

2014 Business Plan RECORD DETAIL

Record Date : 4/9/2014
Submission Date : 4/8/2014
Affiliation Type : Individual
Interest As : Individual
Submission Method : Project Email
First Name : Alan
Last Name : & Angela Scott
Business/Organization :
City :
County :
Zip Code : 00000
Stakeholder Comments/Issues : Sir:

I am also mailing a signed copy for your records in addition to this email copy that was submitted within the confusing time constraints. standards

Thank you

Alan Scott

Draft Business Plan Comment Type :

Attachments : CAHSRA bp 2014 comment ltr 040814.pdf (25 kb)

April 8, 2014

California High-Speed Rail Authority
770 L Street, Suite 800
Sacramento, CA 95814

Attn: Draft 2014 Business Plan – comments

I am submitting this via email without my signature as I do not have that capability. However, I am mailing a signed copy requesting it be attached to this unsigned letter. Thank you.

The below statement was taken from bottom of your March 24, 2014 staff announcement:

About California High-Speed Rail Authority The California High-Speed Rail Authority (Authority) is responsible for planning, designing, building and operation of the first high-speed rail system in the nation. California high-speed rail will connect the mega-regions of the state, contribute to economic development and a cleaner environment, create jobs and preserve agricultural and protected lands. By 2029, the system will run from San Francisco to the Los Angeles basin in under three hours at speeds capable of over 200 miles per hour. The system will eventually extend to Sacramento and San Diego, totaling 800 miles with up to 24 stations. In addition, the Authority is working with regional partners to implement a statewide rail modernization plan that will invest billions of dollars in local and regional rail lines to meet the state's 21st century transportation needs. To learn more visit the Authority's website at <http://www.hsr.ca.gov> and join us on [facebook.com/CaliforniaHighSpeedRail](https://www.facebook.com/CaliforniaHighSpeedRail) and follow us at twitter.com/cahsra

Quite frankly, this statement is one major piece of marketing hype lacking any substance with not an iota of empirical evidence to back-up this full-fledged marketing statement.

Moreover, I can prove it!

I offer the following video taken from the Transportation and Housing Informational Hearing on March 27, 2014, Chaired by Senator Mark DeSaulnier. During this absolutely informative and factual hearing four individuals, who are experts in their field, provided quantifiable evidence completely debunking the paragraph above. The cross section of experts is exceptional and diverse thus eliminating any questions of credibility.

The full video link for your viewing: http://senate.ca.gov/vod/20140327_1311_STV2Vid

Furthermore, the issue of financial and fiduciary responsibility raised its ugly head during this hearing where the estimates by CAHSRA HAVE BEEN incorrect since the very first estimate in 2009. These experts predict a correct costing at least 3 or 4 times the present estimate of \$68 billion dollars of non-existent taxpayer funds, whether state or federal. Further proof estimate for the Initial Operating Section was \$6 billion. Today your estimate is now \$13 billion or an increase by a factor of 2+. Please explain in detail how the happened since for some time both the CEO and the Chairman have articulated their "Monte Carlo Modeling has been correct. Well it seems there is a problem with this system by a factor of two +. Now you have increased the ICS cost are you going back and increase all the other costing for this mismanaged project?

Therefore, in actually fact, this current estimate is purely a politically driven number without basic of any facts because California taxpayers were outraged at the cost at \$97 to \$117 BILLION

DOLLAR estimate back in 2012. Well the actual truth has been known for almost three years by numerous experts and the majority of the opponents of this project.

Point in fact, this obfuscated Business Plan and almost everything else produced by the authority since 2009 has no basis in actual fact nor are they based on empirical construction costing analyses that have always been protested. A number of qualified experts predict the correct cost calculation to be close to **HALF (½) TRILLION DOLLARS** (see previous paragraph) when factoring in principle, cost overruns and interest payments. Reminder, none of this is addressed in your poorly written 2014 business plan. Furthermore, all approvals by the legislature have been based on **no factual evidence** it appears you are just marching to political lines regardless of any qualified opposition. Approvals without comprehensive reviews never qualify as ligament usage of due process!

So over the last three years, a significant number of experts and citizens have presented to CAHSRA & B data derived from credible sources that the cost of the project could be between \$300 billion to \$500 billion dollars. The evidence to support this is factually based on cost overrun factors obtained from recent and past large mega projects. Therefore, I must remind you again, your business plan is totally useless based on all your financial calculations it will only create certain fiscal calamity for the state.

Reason for this disaster is an absolute lack of transparency, competent staff to produce a solid construction business plan, coupled with an out of control single issue political game to create only one outcome ‘a legacy project’ without proper notifications to California taxpayers when 100’s of billions of dollars are being obligated recklessly without a specific quantifiable business plan. This major failing not providing proper notification to taxpayers and receiving their approval is totally irresponsible and rude. Justification for the statement, Proposition 1A set a cost on this project that has been busted by the authority numerous times in the last three+ years. In the private sector, we would call this irresponsible and a real credibility issue requiring only one decision – rejection and it must be taken back to the voters.

Until the fiduciary component of this project is resolved to the absolute requirements as outlined in Proposition 1A, the only option by the Authority is to stop this project forthwith! Once solid corrective actions are completed and then only after approval by a non-partisan oversight committee. The committee requires professionals with solid mega-train project experience of more than 10-years at senior levels of management, professional mega-project financial with more than 10-years at senior levels of management, and a highly rated independent mega-project CPA auditing firm to review all financial records without political pressures like what is going with this project. This would accomplish a number of measurable benchmarks: solid engineering documentation, solid engineering analysis of the entire proposed routing, aggressive coordination WITH ALL STAKEHOLDERS to mitigate 99% of issues prior to the award of contracts and the side benefit is massive reduction of ‘change orders’. The current contractor is noted for change orders. Finally, awarding a contract not to the lowest and *most unqualified contractor* but too the **most competently scored contractor**.

Without question, the authority is on track to produce a project that will surely end up costing nearly HALF (½) TRILLION DOLLARS when all fiduciary factors are properly annotated correctly in the account ledgers. Actually, the net result of these expenditures will never ensure the

citizens and the taxpayers of California & the United States get what they voted for instead of this bizarre abuse of their hard-earned monies.

Example, recent legislative hearing, the authority asked for \$29 million dollars just to keep the doors open – really? Amazing, the mantra from the authority and board has always been “They have worked hard to provide a first class HSR project – (another) really?” How many court cases do not favor the authority? How many questions because of poor work product – I have one example for the record. I am reminded of an incident with three authority engineers in northeast Laton 2013 with maps that did not match the ones in they had in Sacramento. Furthermore, to their embarrassment, they did not know there were **three tributaries of the Kings River**? I am also reminded of the August 2012 board meeting where an Environmental Justice policy was approved. Background, all along the authority and the board assured everyone they were in compliance with their EJ policy as required by NEPA. **Only problem, you never had one.** I am reminded of the numerous errors on alignment of the track, like Baker Commodities in eastern Kings County south of Highway 198. The alignment would take out a key industry critical to the success of the dairy industry that covers the majority of the state, which in actual fact would have decimated the dairy industry. How did this mistake happen, simple ‘poor work product’ or one might call it professionalism the missing link.

In my recent letter to the STB regarding Nossman’s filing a motion for leave on your behalf only further demonstrates what is already known “Rules are made to protect all concerned except for the California High Speed Rail Authority who has been playing chess within legal arena.” Further to that point, it seems political expediency works better than adherence to codes, laws and regulations.

Why the lawsuits, simple they were created by your own failings that resulted in poor work product thus making court findings easy and favoring the litigants. Question, “Why the ‘do overs’?” Again, the simple answer is ‘poor work product’. However, the most critical issue is the authority’s huge financial jeopardy environment. What is this jeopardy - simple no money identified beyond what they on hand have now.

Moving on to other issues **NOT** addressed in your 2014 Business Plan:

1. No electrification.
2. Nothing noted where this electric capacity is coming from? Key point here: The existing grid cannot accommodate, so where is the power to operate this train coming from? Who is going to pay for the new power plants? **(NOTE: The best estimate for a new power plant to come on line is 13 years and that is if the environment process is not mired down in excessive litigation.)**
3. No mitigation for high power electrical lines!
4. How do you intend to mitigate agricultural lands, since you will be tearing up 1,000’s of acres?
5. What mitigation is provided to law enforcement / fire / rescue services along the proposed routing? Who bears the costs for any and all upgrades as cities and counties do not have the capacity to upgrade to provide reasonable and competent life safety responses without the

needed expensive response equipment? It also applies to the medical facilities and any other related emergency response agencies in the immediate area(s).

6. Who pays the cost of the 24 HSR stations?
7. Identify all future funding monies by specific source and how much for the entire project?
8. Your business plan does not quantify how you can get to Los Angeles from San Francisco under 3-hours – why? Furthermore, the routing is an unknown environment; reason up to 30% of the project is designed so how do you know what the actual routing will be, thus timing is an issue. I believe this is what one calls “Pie in the Sky” marketing and hope no one is listening. With the remaining 70% are subject massive unknowns, so prove how you are going to achieve your benchmarks and provide the number of stops as this would be a key omission once again lack of transparency.
9. The business plan does not address the peninsula train scheduling now involving HSR, CalTrain & Union Pacific on only two-tracks?
10. How can anyone set a construction cost of a project when only 15% to 30% of the project has been designed?
11. How are you going to mitigate the subsidence issue across the entire state?
12. How are you going to ensure strict constructions standards across earthquake fault lines when you only have up to 30% of the project designed?
13. Nowhere in the business plan do you address the underground aquifer mitigation? Do you know where all the underground aquifers are?

I offer the following links that factually support my opposition to the massive mismanaged obfuscated generational debt ridden project controlled by individuals who have clearly demonstrate they do not have expertise in the mega-construction arena and to quote a CAHSRA statement “A state of the art high speed rail system.” Unfortunately, the macerations created by the Authority, the Board and other high political individuals whose only goal is to create a legacy driven project regardless of the known ultimate consequences. This type of misguided political interference has only created the disastrous legal actions and again massive obfuscations of what Proposition 1A requires.

Links:

William Grindley and William Warrens report: **IF YOU BUILD IT THEY WILL NOT COME - A Forensic Analysis of Why High-Speed Rail In California Will Fail In Its Initial Operating Years.** A Briefing Paper link – March 11, 2014: <https://www.sites.google.com/site/hsrcliff/> The irony of this document it is very concise and provide well over 100 footnotes something totally lacking in all of the authority’s production documents.

Senate Transportation and Housing Informational Hearing background paper:
http://stran.senate.ca.gov/sites/stran.senate.ca.gov/files/BackgroundPaper3-27-14_Final_amended.pdf A well-written paper that in short order destroys the business plan.

Legislative Analysis Office Senate T/ H Informational Hearing background handout:
<http://www.lao.ca.gov/handouts/transportation/2014/Funding-HSRA-032714.pdf> Again, this handout is a comprehensive overview of the critical issues and yes it does approve of a few parts of the authority's work product.

Professor Ibbs, University of California, Berkeley, Civil Engineering Department:
<http://www.bizjournals.com/sacramento/news/2014/03/28/more-woes-for-high-speed-rail-sf-la-trip-will-take.html?ana=twi> A credential academic who provided quantifiable and quantitative analysis demonstrated the business plan is not a viable business plan especially the cost.

Judge Quentin Kopp interview: http://calwatchdog.com/2014/03/19/high-speed-rail-brief-includes-quentin-kopp-objections/?utm_source=dlvr.it&utm_medium=twitter The Father of HSR and almost immediately after relinquishing his Chairmanship of the Authority Board, he came out totally critical of the direction being taken back in 2009 / 2010. He is asking for what all the opponents want, transparency, coordination, accuracy, fiduciary compliance and competence. The majority if not all of the CAHSRA documents are loaded with of platitudes (my words not the Judge's) only. The missing component is quantifiable substance.

Wall Street Journal article of February 18, 2014:
<http://online.wsj.com/news/articles/SB10001424052702303491404579389682624218434?mg=reno64-wsj&url=http%3A%2F%2Fonline.wsj.com%2Farticle%2FSB10001424052702303491404579389682624218434.html> Lieutenant Governor Gavin Newsom now against Governor Brown's legacy fiscally irresponsible rail project.

Dan Walters editorial of April 7, 2014:<http://www.sacbee.com/2014/04/06/6298864/dan-walters-bullet-train-faces.html> Questioning the financial stability? The agency only has enough money – maybe – for 130 miles of **non-electrified track** from Madera to somewhere north of Bakersfield, **dubbed “the train to nowhere” by critics**. Moreover, to clarify, that statement is correct.

Sincerely,

//S//

Alan Scott

[REDACTED]
Hanford, CA 93230-2848

Email: [REDACTED]